REPORT RESUMES

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COLLEGE PREPARATION FOR BLIND PROSPECTIVE COLLEGE STUDENTS.
FINAL REPORT.
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ARKANSAS ENTERPRISES FOR THE BLIND INC.

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DESCRIPTORS- *VISUALLY HANDICAPPED, *EXCEPTIONAL CHILD RESEARCH, *ACHIEVEMENT, REHABILITATION, COLLEGE STUDENTS, COLLEGE PREPARATION, ACADEMIC PERFORMANCE, BLIND, COLLEGE BOUND STUDENTS, DEMONSTRATION PROJECTS, FOLLOWUP STUDIES, ORIENTATION, PARTIALLY SIGHTED, STUDENT ATTITUDES, GUIDANCE COUNSELING, STUDENT ADJUSTMENT, COLLEGE PLANNING, SOCIAL MATURITY,

IN A 3-YEAR STUDY OF THE PERFORMANCE OF BLIND COLLEGE STUDENTS, 53 COLLEGE BOUND SUBJECTS IN THE EXPERIMENTAL GROUP (MEAN AGE OF 19 YEARS) RECEIVED A 10-WEEK TRAINING COURSE BEFORE ENTERING COLLEGE. THE COURSE CONSISTED OF A BASIC PROGRAM TO AID BLIND HIGH SCHOOL GRADUATES TO PREPARE FOR COLLEGE THROUGH PERSONAL ADJUSTMENT AND ORIENTATION TRAINING. BASIC TRAINING ACTIVITIES INCLUDED IN THE PROGRAM WERE CHOSEN FOR THEIR REHABILITATIVE VALUE RATHER THAN FOR ACADEMIC OR VOCATIONAL VALUE. ACTIVITIES INCLUDED INSTRUCTION IN COMMUNICATION SKILLS, MANUAL SKILLS, SOCIAL SKILLS, GROUP ACTIVITY, PERSONAL MANAGEMENT, ORIENTATION AND MOBILITY, AND GUIDANCE AND COUNSELING. THE CONTROL GROUP OF 49 SUBJECTS (MEAN AGE OF 18 YEARS) DID NOT RECEIVE THE COLLEGE PREPARATION TRAINING. THE CONTROL GROUP INCLUDED FEWER SUBJECTS THAN THE TOTALLY BLIND GROUP AND MORE PARTIALLY SIGHTED SUBJECTS. MEAN IQ WAS 119 FOR THE EXPERIMENTAL GROUP AND 121 FOR THE CONTROL GROUP. FOLLOWUP DATA WERE COLLECTED ON BOTH GROUPS FROM CASEWORK FILES AND PERSONAL INTERVIEWS OF STUDENTS AND COLLEGE STAFF PERSONNEL. SEVENTY COLLEGES AND UNIVERSITIES LOCATED IN 20 STATES WERE INVOLVED. COMPARISONS MADE INCLUDED ACADEMIC PERFORMANCE, MANNERISMS, ADAPTATIONS, NOTETAKING, METHODS OF TAKING EXAMINATIONS, WRITTEN ASSIGNMENTS, READING, CLASS PARTICIPATION, EFFECT OF VISUAL AIDS, LABORATORY COURSES, LIBRARY USAGE, MOBILITY, SOCIAL PERFORMANCE AND ADJUSTMENT, FACULTY ACCEPTANCE, AND COMPARISON WITH OTHER HANDICAPPED STUDENTS. RESULTS INDICATED THAT THE EXPERIMENTAL GROUP WAS SUPERIOR IN ACADEMIC PERFORMANCE, THAT ITS MEMBERS CONTINUED COLLEGE ATTENDANCE LONGER, AND THAT ON THE AVERAGE FEWER SEMESTERS WERE REQUIRED TO COMPLETE WORK FOR COLLEGE GRADUATION. SUGGESTIONS BY COLLEGE STAFF PERSONNEL AND STUDENTS CONCERNING ADDITIONAL PREPARATION NEEDED BY BLIND STUDENTS ARE PRESENTED. ADDITIONAL FINDINGS AND RECOMMENDATIONS FOR FUTURE PROGRAM PLANNING ARE INCLUDED. TABLES AND GRAPHS ACCOMPANY THE TEXT. (KH)

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FINAL REPORT

Research and Demonstration Project No. RD-1232-S

College Preparation
of
Blind Prospective College Students

March 1, 1963 to March 1, 1967

EC 001 137

Arkansas Enterprises for the Blind, Inc.
2811 Fair Park Boulevard
Little Rock, Arkansas 72204

FINAL REPORT

of a

RESEARCH AND DEMONSTRATION PROJECT

entitled

"COLLEGE PREPARATION FOR BLIND PROSPECTIVE COLLEGE STUDENTS"

Conducted by the

ARKANSAS ENTERPRISES FOR THE BLIND, INC.
REHABILITATION FACILITY FOR THE BLIND
2811 Fair Park Boulevard
Little Rock, Arkansas

from
March 1, 1963 to March 1, 1967

Supported in Part by A Demonstration and Research Grant
from the
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Washington, D. C. 20201

Grant Number RD-1232-S

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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INTRODUCTION

It is a real pleasure for me to commend the following study to you. While the evidence is not overwhelming, the data clearly indicates the need for and advantages of precollege training for blind students. One-hundred and two subjects were studied from thirteen States and though there is no great statistical significance that one can point to, there is, nevertheless, an identifiable pattern throughout that shows the impact adjustment services can have on the blind college student.

The study itself is merely a sample of the important work the Arkansas Enterprises for the Blind Rehabilitation Center and other centers like it have contributed to the recent advances made throughout the country in the rehabilitation of the blind. I would be remiss if I did not mention the outstanding role of those primarily responsible for the publication and much of the pioneering effort which has led to our modern approach to comprehensive rehabilitation services for the blind: Roy Kumpe, Executive Director and founder, and J. O. Murphy, Project Director. In the following pages you will find evidence of their creativity and personal leadership.

In a real sense, what we have here is a description of a new era in work for the blind clearly delineating the course of action which we must follow in the future.

D. C. MacFarland, Ph. D., Chief
Division of Services for the Blind
Vocational Rehabilitation Administration
Department of Health, Education, and
Welfare--Washington, D. C.

CONTENTS

CHAPTER I

INTRODUCTION

Background and Facility's Experience 1
Effort and Concern of Others 1
Evaluation Needed 2
Purpose and Rationale 2
Problems of Blind Students Intensified 3
Current Demands for Higher Education 3
Levels of Higher Education 3
Guidance in School Choice 4
Selection Methods and Concern 4

CHAPTER II

SETTING OF THE PROJECT

Physical Plant 6
Process of Admission 6
Population of Normal Setting 6
Facility Terminology 7
Curriculum Differences 7
Community Participation 8
Community Library and Reader Services 9
Instructional Staff 9
Consultation Staff 9
Summary of Setting 10

CHAPTER III

PROJECT PROGRAM

Type of Program 11
Design Limitations 11
Admission and Duration 11
Experimental Design 12
Services in Addition to Academic 13
Special Services 13
Instructional Techniques 13
Lecture Usage 14

Role-playing Usage 14
Long-term Assignment Usage 15
Range of Daily Schedule 15
Orientation:
    Extent and Limintation 16
    Social Environment 16
    Social Pressures Structured 16
    Campus Orientation 17
    Student Body and Staff Orientation 17
Proposed Evaluation of College Potential 17
Evaluation of Basic Training Needs 17
Field Trip Orientation to College 18
Scheduled Training 18

CHAPTER IV

METHODOLOGY

Blind Problem Focus 19
The Research Population 19
All the Estimated College Potential 20
Factors Delimiting the Population and Determining the Research Sample 20
Staff Evaluation, and Undetermined Factor 23
Sample Population Characteristics:
    Sex Distribution 24
    Significance of Sex Distribution 24
    Age Distribution and Significance 25
    Ethnic Groups of Samples 25
    School Background of Samples 26
Definitions of Visual Impairment 26
Classifications Used in this Study 27
Ability Levels of the Samples 28
Economic and Cultural Factors of the Samples 30
Geographic Factors 30
Significance of Sample 30

CHAPTER V

DATA COLLECTION AND ANALYSIS

Method of Data Collection 32
Statistical and Interpretation Methods 32
On-Campus Data Collection 32
Basis of Comparisons 33
Types of Control and Size of College 34
Range of Enrollment 35

CHAPTER VI

RESULTS: CAMPUS FOLLOW-UP STUDY

Impressions of Administrative Levels 37
General Impressions of College Personnel on All Levels 38
Appraisal of Blind Students and Fellow Students Attitudes . . . 39
Academic Performance of Blind Students 40
Quartile Estimates 40
Mannerisms in the Academic Setting 40
Methods and Adaptations 41
The Responsibility for Arranging Adaptations 41
Note-Taking Extent and Methods 41
Note-Taking Methods and Problems 42
Blind Student's Appraisal of Note-Taking Methods 42
Methods of Taking Examinations 43
Where and When Examinations Were Taken 43
Modified Examinations 43
Written Assignments 44
Class Participation 44
Blackboards and Visual Aids 45
Laboratory Courses 45
Difficult Courses 45
Library Usage 46
Methods and Problems of Campus Mobility 46
Social Performance and Adjustment 46
Experience of College Personnel with Blind Students 47
Faculty Acceptance of the Blind Student 48
Anticipation and Occurrence of Problems 48
Comparison with Other Handicapped Students 50

CHAPTER VII

RESULTS: COMPARISONS OF EXPERIMENTAL AND CONTROL SAMPLE PERFORMANCE

Introduction to the Comparison Areas of the Findings 52
Results of Guidance Anticipated 52
Catagories of Evaluations and Recommendations 53
Effect of Staff Evaluation on College Enrollment of Experimental Samples 54
Evaluations of Students Not Entering College 54
Evaluation of Students Who Entered College 55
Case Studies of Evaluations and Recommendations 56
Comparison Between the Experimental and Control Samples' Continuance in College 59
Summary of Achievement of Students in Non-accredited Colleges . 61
Comparison of Achievement Between the Experimental and Control Samples as Indicated by Grades in Acredited Coleges 62
Rate of Completion Projected 63

Standard Deviation of Performance in Accredited Colleges 63
Achievement of Blind Students in Colleges of Varying Sizes . . . 64
Comparison of Achievement in Public and Private Institutions of Higher Learning 65
Comparison of Achievement Between the Two Samples Having Residential, Public, and Private School Backgrounds 66
Comparison of Achievement of Students of Various Levels of Sight in Both Samples 67
Comparisons of Above Average Performances 68
Major Fields of Study Chosen by the Blind Freshmen 69
Employment or Placement Implications 71

CHAPTER VIII

RESULTS: SUGGESTIONS OF COLLEGE PERSONNEL FOR ADDITIONAL PREPARATION OF BLIND STUDENTS FOR COLLEGE

Method of Obtaining and Extent of Suggestions 72
Organization of Suggestions 72
Charts of Functional Classification of Suggestions 72
Priority for Additional Preparation as Indicated by Suggestions of College Personnel 72

CHAPTER IX

RESULTS: SUGGESTIONS AND EVALUATIONS OFFERED BY THE STUDENTS

Method of Campus Inquiries of Blind Students 83
General Impressions about College 83
Course Adjustments in First Semester 84
Limitations in Course Choice Felt by Colleges and Students . . . 84
Admission Arrangements and Problems 85
Equipment Possessed and Needed 85
Management of Reading 86
Presenting Problems for Adaptations 87
Financial Situation of Students 87
Student Suggestions for College Preparation 88
Evaluation of Specific Activities in Preparation for College . . 89
Over-all Evaluation and Composite Index for Evaluation of Both Samples 92
Indicated Current Value and Improvement in Curriculum 98

CHAPTER X

IMPLICATIONS

Implications Regarding Communication Skills 101
Implication for Counseling .102

CHAPTER XI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Conclusions Related to the Demonstration Course of College Preparation Project 105

Conclusions Drawn From Comparisons 105
Conclusions Related to Guidance 106
Recommendations 107

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School and rehabilitation couselors, educators and rehabilitation administrators who hailed the early formal announcements as a positive course of action share the vision of the pioneers. Their stimulating inquiries provoked more solid planning.

To Doyle Best and Robert Thomas of the Regional Office and to Louis Rives and his successor, Douglas MacFarland, as Chief of Services for the Blind, Vocational Rehabilitation Administration, we owe a debt of recognition for their assistance in helping to develop the idea of a formally planned an intensive study of the college preparation effort which was being conducted by the facility.

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J. O. Murphy, Director
Research and Staff Development
Arkansas Enterprises for the Blind, Inc.
Little Rock, Arkansas
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CHAPTER I

INTRODUCTION

Background and Facility's Experience

The Arkansas Enterprises for the Blind, a specialized rehabilitation facility for the blind, in its third year of operation faced the problem of helping a blind person prepare to meet the challenge of going to college. The needs of blind persons attending college were identified from the experience of staff members, some of who were blind when they attended college. The areas of special training to meet these needs were provided by the facility in its regular program as nearly as possible. From 1950 to 1961 an increasing number of high school graduates received this training in order to better develop their personal competencies before taking the next step which sometimes was to employment instead of college.

Early in the year of 1962 a brief and artfully designed folder entitled "College Preparation Course" was released by the facility to rehabilitation counselors, schools, and individuals having a personal interest in services for the blind. The folder stated:

> "The course is the outgrowth of the AEB's broad background in working with precollege students. More than 250 of its 900 trainees of the past fifteen years have gone to college. They represent graduates from twelve state residential schools for the blind and many public schools. It helps to bridge the gap between school in a sheltered secondary setting and that of the independent adult level on a college campus."

The folder further stated:

> "Anyone who plans to go away to college for the first time is likely to have some apprehension about what it is like and how he will get along. For the blind student these feelings may be intensified."

The response to the folder from rehabilitation counselors, school people, and some parents indicated the strong feeling of need for this service. Consequently, in the summer of 1962, the largest number of high school graduates in the facility's history were enrolled in its training program.

Effort and Concern of Others

Recognition of the special needs of blind prospective college students had been given by other specialized agencies serving the blind. The Chicago Lighthouse for the Blind conducted a summer course in college preparation and the Virginia Commission for the Visually Handicapped sponsored a week's precollege conference for blind high school juniors and seniors.

Evaluation Needed

Although the facility's previous experience and that of 1962, together with the programs of the Chicago Lighthouse and the Virginia Commission, indicated the need for such a service for blind students, the measured value of such a service had not been established. At an institute for rehabilitation counselors conducted by the facility in September 1962, many questions were directed to a panel of persons who had described the summer's program of the College Preparatory Course. The expenditure of such amounts in a preparatory step was a matter of considerable concern to rehabilitation counselors who were already anticipating higher than average case service costs for clients going to college. This concern was also shared, and perhaps reinforced, by a member of the Vocational Rehabilitation Administration's regional staff who was present.

Due to the lack of research about the blind college student and his college performance, these questions about the value of such a preparatory course could not be answered satisfactorily. It was from such inquiries that the idea of developing this demonstration and research project came.

Under the guidance of members of the national and regional staff of the Vocational Rehabilitation Administration and the cooperation of the Arkansas Rehabilitation Service, an application was made for federal funds to conduct a 3 year research and demonstration project. The application was approved, and on March 1, 1963, the Arkansas Enterprises for the blind began the project entitled "College Preparation of Blind Prospective College Students, RD-1232-S."

Purpose and Rationale of this Project: Problems of Colleges and Counselors

The questions raised by counselors and others regarding blind college candidates are the same as those raised about their fellow sighted college candidates. Colleges and rehabilitation counselors seem to face very closely related problems. Colleges have only a certain amount of space and budget with which to provide services for the students knocking on their doors. Rehabilitation counselors were also faced with a large case load and budget problems. In addition they had been charged with screening applicants and providing services on a basis of reasonable expectation of success. In some states graduation from high school is the only qualification required for admission to a public controlled college.

Educators as well as others have long recognized that the transition from secondary school to a college or university is a difficult one for most students and, as a result of the adjustment difficulties involved, many college students fail to meet academic requirements. The failure may result from many factors:

1. Inability to make the necessary emotional adjustments involved in the new setting
2. Lack of efficient study habits and methods
3. Lack of understanding of college methods and procedures
4. Lack of motivation for college and careers that require college education
5. Lack of financial resources

Problems of Blind Students Intensified

All of these problems may be magnified for the blind student, particularly in the adjustment phases. Usually the blind student has come to college from a home situation which has been a highly protective one or from a residential school for the blind which has been his second--often his first--home for several years, though each year an increasing number have come to college from regular public high schools. From either educational background, frequently the blind student has been faced with less strenuous academic demands than his sighted counterpart. However, the almost universal use of English placement and other college entrance tests is a constant reminder that graduation from secondary schools alone is an inadequate standard for college guidance and admission.

Current Demands for Higher Education

With the increased technology of present day industry, the blind as well as the sighted student is faced with the need for education beyond the secondary level. Technological developments have also created a pressure for more college-educated persons. Since World War II the demand for college graduates has exceeded the supply.[1] The losses that our society has experienced in its failure to educate all its members to their capacities is a question being asked in responsible educational circles.[2] The question of the losses our society has experienced as a result of misapplied educational effort must also be borne in mind. Such losses are not limited to the cost of expanding higher educational facilities but must include the unprofitable use of personal time, ability, and financial resources.

Levels of Higher Education

While the need for college educated persons has continued to increase, it does not follow that all graduates of secondary schools should attend college. Higher education is a relative term but has traditionally referred to college education. Even though a high school diploma has become an almost universal requirement for employment in any occupation except the unskilled ones, it does not preclude the need for additional education. Some persons who may have vocational and personal need for additional education, or even social pressures for it, may find their needs fulfilled in a form of higher education provided by vocational schools. More realistic appraisal of their goals and the demands of a college course may enable them to choose more wisely the kind of higher education investment to make.

Guidance in School Choice

It is felt that better ways must be found for more carefully matched institutions and students so that both can produce to the limits of their respective capacities.[3] One study conducted in 1960 expressed the view that there is a college which would be a productive place for one student but not for another.[4] This statement should not be interpreted to mean there is a college for everyone, but it indicates that guidance in choosing an educational institution may be just as essential as the decision to attend college.

Selection Methods and Concern

Much concern has been expressed about the selection of college students even though a large amount of research has been done in an effort to determine guidelines for the selection and admittance of only those students who can take full advantage of college opportunities. A recent review of college dropouts asserted that no adequate solution to the problem has been found.[5] Educational institutions and systems of higher education are questioning the luxury of admitting students indiscriminately at the freshman level only to lose up to one-half of such students by the beginning of the sophomore year.

Although a large amount of research regarding sighted students has been done, there is a felt need for more exact prediction of college success for them at the time of admission. It seems that less research has been done on predicting the success of blind high school graduates. One reference to the prediction of academic learning of the blind elementary student was rather critical of the appraisal methods used and concluded that for the elementary level of education a large area of ignorance yet existed.[6]

The methods criticized are essentially the same that have been used for the prediction of success for the high school graduate in the general population. For the general high school graduate population, the most reliable single predictor of college performance has been found to be high school grades. Achievement test scores and aptitude test scores

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[1] "Factors Related to College Attendance," 1961, p. 1, Cooperative Research Monograph No. 8, Office of Education 54023.

[2] In and Out of College, October 1964, p. 9, Report 1, Oklahoma State Regents for Higher Education, State Capitol, Oklahoma City.

[3] Ibid., p. 1, ff.

[4] T. R. McConnell, Introduction to Research on College Students, ed. Hall T. Sprague, Western Interstate Commission on Higher Education and Center for Study of Higher Education, p. 4, University of California at Berkeley, December, 1960.

[5] Lee M. Marsh, "College Dropouts," Personnel Guidance Journal, Vol. XLIV, No. 5, p. 475 ff, January 1966.

[6] Dr. T. Ernest Newland, International Journal for the Education of the Blind, Vol. XIV, No. 2, p. 45, December 1964.

have proved to be slightly less reliable according to the overwhelming majority of the prediction studies.[7] When employed singly, each of these three factors will ordinarily correlate with first-year college grades within the range of + .40 to + .60. Used in combination, two or more of these factors will correlate with college grades within the + .55 to + .65 range, according to these studies. These ranges of predictive efficiency have remained practically unchanged over the past four decades.[8] New research methods combining many other factors have given some promise of raising this range + .70 to + .75.

All these studies have been concerned with the general high school and college freshman population. Their conclusions express dissatisfaction with predictive efficiency. So far as is known, no more accurate, if as accurate, predictions have been made concerning the blind high school graduate's prospects in college. Since the studies referred to reflect something yet to be attained in the guidance of the sighted high school graduate, it was felt that from this project in which more of a practicum and social research method would be used something of value might be learned for the guidance of the blind high school graduate considering higher education, particularly college.

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[7] Benjamin S. Bloom and Frank R. Peters, *Academic Prediction Scales*, New York, The Free Press of Glencoe, Inc., 1961.

[8] *In and Out of College*, op. cit., p. 8.

CHAPTER II

THE SETTING OF THE PROJECT

Physical Plant

The project was conducted in a rehabilitation facility which operated a full-time program for personal adjustment and prevocational preparation of the adult blind. The facility occupied a city block of land and was situated in a middle-income residential area of a state capitol city with a metropolitan population of 250,000. During the first year of the "college prep" course, the facility was undergoing construction. By the second year it was completed and consisted of four, modern 2-story, brick buildings equipped for year-around air conditioning. Two of the buildings were dormitories and had the capacity to accommodate thiry men and twenty women.

Process of Admission

The process of admission for training at the facility has always been an individualized application procedure instead of a class registration. Admissions are made by reservation and set for one day each week, usually Monday. In order to facilitate the orientation of each new trainee, the intake policy of the facility is to admit as few at a time as practical. Admission and termination are a weekly procedure rather than a semester or school-year procedure.

A trainee's first week in the facility is regarded as an evaluation period. Evaluation of personal competencies and an estimate of the basic training needs are made during this time. Although evaluation and reassessment of such needs is a continuous process in the facility, the initial evaluation and subsequent ones determine the individual's course of training. A trainee's progress in the development of personal competency determines the length of the training. When a staff evaluation indicates that additional training will result in no further progress or learning, the termination of training is recommended to the trainee and his rehabilitation counselor.

Population of Normal Setting

The age of the normal trainee population ranges from 16 to 79, with a varying mean age of 36 and with a varying age mode of 40 to 45. Both the mean and the mode are usually modified to lower levels in the summer months when more high school graduates are enrolled. The ratio of high school graduates became more pronounced during the three years of the college preparatory course. In 1963 the capacity of the facility was thirty-nine. Of this number, 17 were enrolled in the college preparatory course. In 1964 the capacity was increased to 42, of which 33 were enrolled in the college preparatory course. In 1965 the facility's capacity was increased to 52 with 34 enrolled in the college preparation course. The ratio in nearest percentage of the college preparation enrollment to the number of regular trainees may be seen in the comparisons in Table 1.

Table 1 Ratio of Population in Facility

Year	Center Population	College Prep Trainees	College Prep Enrolled	Regular Trainees
1963	39	17	46%	54%
1964	42	33	79%	21%
1965	52	34	66%	34%

Facility Terminology

Purposely the facility presented a different setting from school. Early experiences with candidates for training at the facility justified creating a different nomenclature. Then the majority of the candidates were persons who had been out of school for many years and most of them looked upon school as a place for "kids" and "beginners." Rehabilitation workers met more resistence from their clients when they mentioned "going to school" than when they mentioned "going to a rehabilitation center." Similarly, "rehabilitation activity" was more acceptable than "studying;" "training" more acceptable than "courses;" "schedules" more acceptable than "classes;" "trainee" more acceptable than "student;" and "instructor" more acceptable than "teacher."

The daily training schedule differed from, but in instances was similar to that of a school. The daily schedule consisted of:

1. 45-minute instructional periods
2. one discussion period of 45 minutes led by a staff instructor
3. one 30-minute period of current news discussion in which trainees met in three separate small groups under the leadership of an advanced trainee
4. two informal social periods or "breaks," one in the midforenoon and one in the midafternoon

All periods changed at the sound of a signal and each trainee, after orientation, was responsible for moving to the next scheduled training activity, individually, and not as a class movement.

In addition to the daily schedule of instruction, other instruction was arranged on a weekly and biweekly schedule. Instruction in dancing, specific group games, and swimming were scheduled once a week. A Gavel Club, in which public speaking instruction was done and in which the enrollment was voluntary, was scheduled on a biweekly basis.

Curriculum Differences

In this facility all basic training activities are chosen for their rehabilitative value instead of their academic or vocational value. However, some training activities have academic and vocational value and in some instances have been the definite factors which influenced a trainee's choice of and qualifying for a specific vocational objective. Simply stated, the objective of all training at the facility has been to enable the person to move more capably into the next phase of rehabilitation effort he needed to enter, whether it was to school, to home, or to employment.

A repertoire of activities instead of academic courses have characterized the basic training program of this rehabilitation facility for the blind. This program of activities and its consequent conditioning and development of personal competencies was designed to meet the needs of blind high school graduates. These basis training activities are:

1. Communicative: Consists of Braille, handwriting, and typewriting, and includes the use of talking books, tape recorders, radio code, and the telephone.

2. Manual: Consists of novelty woodworking, ceramics, leather and other craft work, use of hand and power tools.

3. Social: Playing bridge, rook, dominoes, checkers, bowling, table shuffleboard.

4. Group: Planned recreational programs, dances, bingo parties, picnicking, current event discussions, unstructured discussions, theater, swimming and picnic parties.

5. Personal Management: Cooking a meal, setting a table, sewing on buttons, washing and ironing a garment, devising markings to identify colors for matching clothing and for sorting clothes for laundry, alterations, grooming and personal hygiene.

6. Orientation and mobility: Identifying one's position in relation to his surroundings, independent personal travel from one place to another, knowledge of obtaining and using guide service.

7. Counseling and Guidance: Individual evaluation and interpretation of tests and personal performance.

To this list of basic training activities was added an area of academic instruction in which only college preparation students were enrolled. English was the chosen academic area since it is almost universally required of freshmen.

Community Participation

Community cooperation with the facility has been apparent in its development and ongoing program. The facility itself is a product of community cooperation and sponsorship. The Lions Clubs of Little Rock initiated the movement for its creation and in 1947 enlisted the statewide support of the Lions Clubs for the development of the physical facility and present program.

Adequate mobility and orientation training could not be given without the cooperation of the citizens, the city officials, and the merchandising establishments. Residential and business district streets are used to supplement the facility walkways as a training ground for mobility and orientation. Training in the use of escalators can be achieved only through the goodwill of business places having such equipment. Theatres and other recreational facilities have generously made their services available. Churches have provided transportation to worship services for interested trainees and made certain church-owned recreational properties available for group activities.

Community Library and Reader Services

Library resources were made available to the facility by the Little Rock Public Library and Little Rock University. Both organizations provided service to the college preparation student on the same basis that they provided services to other nonresident readers. Reader service for the expanded demand of the course was developed through the nucleus of community volunteers who had helped the facility in its regular training program. Staff representatives organized and instructed the expanded corps of volunteers and supervised their services to help the blind student learn the most efficient way of using such services. In this setting all readers were unpaid volunteers, but definite guidelines governing their services were laid down for the guidance of both students and readers. The guidelines set out the responsibilities of each for making and keeping reading appointments.

Instructional Staff

In 1962, when the college preparation course was in a pilot stage, the staff and the enrollment at the facility was some different from that of the three years during the demonstration and research project. During this period the enrollment was increased from 30 to 50 trainees with a comparable increase in staff. Two factors were responsible for the increase: one, the completion of the construction program which provided more housing capacity, and the other, the increased demand of rehabilitation agencies for services. In order to meet the needs of the college preparatory program, three additional staff members were added to the regular staff.

Academic qualification of the instructional staff were: three master's degrees, eleven bachelor degrees, and four college-level experienced instructors. Major fields of education represented in the staff were: psychology, business adminstration, social studies, law, rehabilitation counseling, industrial arts, home economics, and English.

Consultation Staff

In addition to the instructional staff for training, the regular program provided medical consultation as a staff service to all trainees and for the guidance of the instructional and supervisory staff. Such consultation consisted of general medicine, psychiatry, and ophthalmology on a scheduled basis. Otology and podiatry consultation and services were arranged by special appointment as such need arose.

Three advisory committees were created for the project--academic, research, and editorial.

The advisory academic committee was composed of five persons from the community and state whose professions and experience enabled them to advise the project staff about college problems, the course content, and methods most applicable to such a project course. The committee was composed of a college dean, a dean of a college of education, a college professor and department head, a special education consultant, a rehabilitation supervisor, and a superintendent of a school for the blind.

A research advisory committee composed of four members worked with the project staff to develop the research instruments and techniques used in the project. This committee was composed of a research psychologist, a professor of social work research, a coordinator of rehabilitation counselor training, and a rehabilitation agency director of research.

The research and academic committees met in specified times in the early stages of the project for consultation and in called sessions afterward. Individual consultation with committee members on specific problems related to their special fields was available and used throughout the course of the project. Both committees fit well into the regular program setting and functioned in a manner that added enrichment to the rehabilitation environment and effort of the facility.

Summary of Setting

The setting of the regular program provided an opportunity for the continued evaluation and continued basic training of a blind person considering college admission. Counseling, psychological testing, and assignments of college-related work, together with personal management in a permissive but responsible environment, had the possibilities of adding some dimension to the usual standardized college evaluation. The total environment lent itself readily to a demonstration and research project designed to orient a blind person to the problems he might expect to face in a college setting and develop some additional skill in coping with them.

CHAPTER III

PROJECT PROGRAM

Type of Program

The "College Preparation for Blind College Students" was properly a demonstration and research project. It involved operational functions of persons and groups which required observation, reporting, and interpretation of performances, some of which were similar to those used in college grading. When it could be done without duplication, standardized instruments of measurement were used. In addition to the college preparatory program of training and evaluation at the facility, an on-campus follow-up of the students during their freshman year in college was planned.

The follow-up plan included interviews with the college staff members working in positions most likely to bring them into contact with the student personally, as well as those in administrative positions whose knowledge of the student might be obtained more from records than from personal relations.

Design Limitations

The design proposed to create a simulated college situation but on a very limited basis. Certain requirements of the course were planned to demand as much work as a similar college course would but the duplication of a college function was limited to the academic instruction area. Some situations were planned to create similar social stresses that would be felt in college. Students understood that no college credit could be expected from the course and recognized the experimental nature of the project. They were aware that an evaluation of their performance would be given to their sponsoring rehabilitation counselor. This created some pressure for achievement and to some extent provided a motivation similar to that for making good grades in college. However, the intent of the entire program centered more on creating skills and providing experience that would give a more realistic self-evaluation for college than on duplication of college work. While the design could not duplicate a college experience, it was expected to help the students enrolled to taste college in a way that would afford more guidance than reading about it could.

Purposely, an effort was made by the facility staff to emphasize the importance of the course for those who would enter college later. Some students felt a strong sense of responsibility as a representative of a disability group, but it may be justly doubted that this provided the same motivation for achievement they would have felt in an actual college situation.

Admission and Duration

Admission to the course was processed by the student's rehabilitation counselor before a reservation for enrollment was granted by the facility. During each of the three years of the project operation, the preparatory course covered a period of 10 weeks from mid-June to mid-August.

Experimental Design

A provision for both experimental and control groups to afford a basis for research comparison was made. High school graduates who were admitted to the college preparation course at the facility and subsequently enrolled in college constituted the experimental group. The control group was composed of blind freshmen college students who enrolled in college without having had such additional preparation after completing secondary school.

In the original planning stages, other classes of candidates were considered:

1. blind students who had completed some college work but who had personal adjustment and academic difficulties

2. blind persons who were determined to attend college despite the judgment of rehabilitation counselors who felt that they needed to more realistically evaluate their goals as feasible vocational objectives.

Final planning provided that both of these classifications of clients would be excluded from the research project and candidates of probable college potential was defined to include only blind high school graduates and students who had completed their high school junior year.[9] It was felt that the inclusion of high school juniors would afford two opportunities for remedial work, if in their first year in the college preparatory course, severe deficiencies were discovered. While this provision of services for high school juniors seemed sound and some rehabilitation supervisors yet insist it is needed, in practice it did not work out, as shown in Table 2.

Table 2 Enrollment

Date	Number Enrolled	Graduates	Juniors		
			First Enrollment	Return Recommended	Returned Enrollment
1963	17	12	5	4	2
1964	33	29	4	3	0
1965	34	34	0	0	0
TOTALS	84	75	9	7	2

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[9] Letters of Exchange between Mr. Nichols of the Department of Health, Education, and Welfare, VRA., and Mr. Kumpe. February 26, 1963 and March 13, 1963.

Five juniors participated in the first year of the project. One was evaluated to be of doubtful college ability but four were seen as college potential. It was recommended that they return a second time for precollege training, but only two returned. In the second year there were four juniors. In evaluation one was seen to need no further preparation, but three were evaluated to need another session of precollege training; however, none of the three returned. In the third year no juniors were enrolled and no previously enrolled juniors returned.

Services in Addition to Academic

Services in addition to academic and basic training instruction included some offered in varying degrees by different colleges. Tuition provided such services as food, dormitory room, linens, maid service, home laundry equipment and instruction in its use. Medical guidance and limited treatment, consultation; nurse conference and service; and psychiatric evaluations were also provided. General medical consultation and the initial psychiatric evaluations were scheduled for the trainee on an individual appointment plan.

Special Services

Continuous evaluation of the college preparation student's needs led to recommendations for other special services not provided by tuition. Special services refer to those needed by some individuals but generally not needed by all blind persons. Such services include optical aid evaluation and fittings, otology examinations, audiometric testing in an audiology center, and hospitalization for acute conditions. Except in cases of acute conditions, special services were rendered only after the vocational rehabilitation counselor of the referring agency authorized it after receiving a staff recommendation that such a service be rendered. When the referring agency declined to render the service, the home rehabilitation counselor usually brought the need to the family's attention and they accepted the responsibility for the special service. Conditions diagnosed by the facility's medical consultant to be acute were managed as emergencies. Emergency treatment was provided immediately and arrangements for authorizations were processed later by the rehabilitation counselor in keeping with VRA regulations.

Instructional Techniques

Instructional techniques included: lectures, class assignments, library usage, use of readers, large and small group sessions, long-term assignments of research, oral reports, role playing, and academic examinations. Perhaps none of these procedures or techniques are new in either secondary or college educational practices but some students had never written a theme or a research paper.

The use of this wide range of techniques of teaching was consistently made during the three-year demonstration and research period. For the consistency of research, it was felt that no major deviation from year to year should be made. Consequently, the three-year course was essentially the same for each of the experimental groups.

Lecture Usage

The specific application of these techniques in the course needs some further exposition. Lecturing, which is probably the predominant method of instruction in arts and science colleges, was used for four major purposes:

1. orientation
2. general instruction
3. sample courses
4. career information

The four purposes mentioned covered such areas as information about the operation of the facility and student responsibilities; information about customary college enrollment requirements; specific subject matter lectures such as math, which were called sample lectures; and information regarding specific career requirements and opportunities was called career information.

Lectures for orientation purposes were presented by staff members, but guest speakers who were specialist in the subject matter or professions about which they spoke were used. They represented college professors, research scientists, and career professions such as law, journalism, and social work.

Twenty-one lectures were presented to the college prospects each year: three for center orientation, one for orientation to a specific service, three sample lectures, seven general information lectures relating to college performance, and seven career lectures. Each lecture dealt with a different topic and, with one exception, was made each year by a different person. Consequently, the college preparatory student was exposed to a wide variety of material, all related to college work and prospective careers. The lecturers also presented a wide range of lecture styles. In all lectures the students were held responsible for taking notes and being prepared to take an examination on questions regarding topics presented in the lectures. This responsibility was covered in the orientation to the course and no reminder was made of it. This practical experience of note-taking demonstrated the skillfulness and methods of note-taking used by the blind and also brought out the problems created for the student, his fellow students, and the instructor. These problems, such as noisiness created by Braille note-taking, became the topics for discussion in the small group sessions.

Role Playing Usage

Role playing was used to vitalize some specific problems of interpersonal relations. Such problems as interviewing, employing and discharging a reader, discussing the problems of classroom procedures with an instructor, or reaching agreement with a roommate about the use of special equipment in their dormitory room were made more meaningful by role playing.

Long-term Assignment Usage

Long-term assignments requiring purposeful planning and organization were made in an effort to simulate the experience of term papers and research. Within the first ten days of the course the research assignment was made by the English instructor, at which time the due date of six weeks later was stated. It was also stated at the time the assignment was made that late papers could not be accepted and that no further mention of the due date would be made. Assistance needed in obtaining research materials and readers was provided.

Small Group Usage

Small group sessions which were conducted three times a week were structured and used for discussing the problems a blind student could anticipate in doing college work. In some instances these problems had already been faced by some members of the group while attending high school. In such instances these sessions served to share experiences and create reassurance. Some problems were entirely new to some students who found the small group sessions helpful for future planning.

The small group sessions were used for receiving the oral reports. This assignment had been made one week prior to the date of the report. Each student had the liberty of choosing the subject on which to report. Guidelines for organizing and giving the report were given by the instructor at the time the assignments were made. They served as a guide to the student in preparing the report and as a scale to be used by the staff member in evaluating the report when it was given.

The small group sessions also served each year as a means of obtaining from the students an evaluation of the college preparation course. This evaluation was also a discussion. Criticism and commendations were given as each person desired to do. From these evaluations the staff learned of situations in which the course would be strengthened without violating the research design.

Range of Daily Schedule

The daily schedule of training for the college preparatory student provided one period of academic instruction, limited to English; one period for either lecture or small group discussion; one period for current news discussion; and five periods for basic training to develop skills of personal competency. Skills of personal competency included Braille, handwriting, mobility and orientation, typewriting, posture, grooming, hygiene, and social skills. Many college preparatory students felt the need for developing skill and knowledge in games such as bridge, checkers, dominoes, bingo, and dancing. All such instruction was designed to enable the blind student to enter into pastime activities in a dormitory or other college setting. As this daily schedule indicates, much of the student's time was devoted to the development of skills that are basic in the rehabilitation process of personal adjustment and prevocation-preparation.

Orientation

Extent and Limitations

Considerable orientation was necessary for the college preparatory group. While some readily recognized their need for a great deal of development, many had little idea of either their potential or personal competencies in the areas of skill so badly needed by a blind person in college. This was as true with regard to mobility and orientation as with the other areas of competency. Many felt that academic achievement was all that was necessary as a preparation for college and were somewhat surprised that the college preparatory course offered only one academic subject. The necessity for skilled note-taking, the profitable use of a reader's time, efficient use of tape and disc recorded books, and the interpretation to professors of the devious methods by which a blind student could do classroom and laboratory work could be mentioned in orientation, but more conditioning to these needs was the object of the entire course.

Social Environment

Orientation consisted of several phases. Some phases were conducted in a manner very similar to that carried on by colleges and universities. These phases consisted of staff lectures in which the policies of the facility on personal behavior and schedules of training were given. Questions regarding the philosophy under which the rehabilitation facility operated indicated the need for such a transitional training period. Some apprehension was seen in requests for more exact clarification of the term, "socially acceptable behavior," which was stated as the norm of personal conduct. However, some expressions of hurt pride were seen in the discussions about the policy of having a quiet period and a close-up hour for the entire facility and specifically the dormitories. There seemed to be both a fear of accepting responsibility and a resentment of any restraints. Some gave vent to the idea that colleges laid no restraints on its students, but most accepted the idea that orderly processes required some limitations even on a college campus.

Social Pressures Structured

Pressures which required deliberate choice were structured in the schedule of training. Recreation and other social functions were scheduled at times when they could be arranged to the best interest of the summer's schedule. These engagements frequently came upon an evening immediately before an examination. The training schedules remained fixed as they would in a college situation. Similar situations were faced by individuals who made personal commitments of a social nature, sometimes with the choice being posed by a friend of the facility who wanted to have the student as a house guest. All such conflicts posed a problem of self-direction and individual responsibility.

Campus Orientation

The phase of orientation to the buildings and grounds of the facility was carried out by both staff members and noncollege preparatory trainees who were already oriented and sufficiently experienced in mobility to guide another person. For some college preparatory students several periods or orientation were required. This phase of orientation acquainted the new student with all aspects of his new environment: dormitory locations and rooms, dining areas, instructional areas, the walkways joining the four facility buildings, and the hallways of each. In some instances assistance given by a noncollege trainee who could demonstrate superior personal competence created a challenge for the prospective college student.

Student Body and Staff Orientation

A formal orientation of the students, staff, and some volunteers was held on the first evening. Under the guidance of the supervisor of recreation, a social hour was planned. Both the college preparatory students and the noncollege preparatory trainees grouped themselves by home states and elected a spokesman who extolled the virtues of the homestate and introduced each member of the state group. This even usually broke the ice and helped to bring out the widespread geographical representation of the facility's population.

Proposed Evaluation of College Potential

The facility accepted the responsibility for further evaluating the blind person's performance in the course as an indication of college performance. Many of the graduates had taken one of the two standard college entrance tests--The Scholastic Aptitude Test and American College Tests--usually referred to as the SAT and ACT, respectively. Students who had taken neither of the test were given the SAT by the counseling staff during the course. The SAT was preferably used since it had standardized norms for a blind person. In addition to the indication of standard test results, the course was designed to supplement such results by an interpretation of the student's performance. The evaluation took into consideration the ability indications but added the dimension of staff evaluation of overall performance. Evaluations were interpreted to each student and transmitted to the rehabilitation counselor in the final report. The written report informed the counselor of the positive and negative indications for successful college performance as seen by the facility staff.

Evaluation of Basic Training Needs

Prior to the admission date an evaluation schedule had been arranged for each student and a printed copy was provided for his use. This schedule specified the time and place and the person to whom the student should report for evaluation of his performance in each of the basic training and academic areas.

An evaluation form was used for each area of performance and a report of the evaluation was given to the director of training. The reports gave the student's need for training in terms of "much," "some," or "none," with whatever comment the evaluator might add for clarification. From these reports the student's schedule of training in the basic areas was made. All college preparatory students were scheduled for academic instruction, lectures, and small group discussion, which constituted the core curriculum for the college preparatory course.

Field Trip Orientation to College

Each year a field trip was scheduled and made to a college as a means of guidance. College hosts arranged for the students to have lunch at the college cafeteria, meet the librarian who interpreted library catalogue usage, attend a class lecture, tour the dormitories, and meet with an administrative official for discussion of college tradition and policy. For some students this was a first-time experience. Field trips were scheduled late in the course in order that the students might take as much advantage of the trip as possible to resolve doubts and obtain answers raised earlier in the course.

Scheduled Training

The second week in residence all students were scheduled for training in the basic rehabilitation areas of need and in the core curriculum. Schedule changes in basic training areas were permitted only upon staff recommendation. No changes were permitted in the core curriculum area during the entire course. The student's performance in the scheduled assignments were regarded as indications of college performance and was so interpreted to the group during the orientation period.

CHAPTER IV

METHODOLOGY

Blind Problem Focus

The foregoing description of the project setting and the project program may give the impression of a small college or a special "prep school" operation because of the frequent mention of orientation, lectures, tests, examinations, note-taking, instructors, and students. This is a rather logical impression but there is a significant difference. Small colleges are colleges, and their emphasis is on the academic work to which they limit their curriculum. The emphasis in this demonstration and research project was on problems faced by a blind person doing college work which to a very large extent is academic in nature and designed to be done chiefly by the use of sight. The blind person must expect to make his own adaptations of methods and aids which enable him to successfully pursue the college course designed for the sighted person.

This adaptation is one requiring personal performance skills, as well as knowledge of resources. Even the knowledge of resources that may be most helpful is useless if the blind student fails to take the initiative to have these resources on hand at the time they are needed. While it may seem trite to observe that the arrival of a recorded textbook after the course is finished will be of no value in pursuing the course, this is the kind of problem with which the project dealt and which the blind student in college must face. Methodology of the project was designed to create an experience from which its population could learn by feeling the problem of meeting deadlines in a strange environment in which information and guidance would be provided but where self-direction would be essential. The principal method was one of demonstration. While lectures on academic matters were provided, they were provided in order that the hearer might later take an examination to test his skill in capturing an idea and reflecting it back through a channel of communication acceptable to a sighted person. The method provided a means of input and feedback, which revealed that the use of the specific communication media and methods available to the blind might be as important a factor in acquiring a college education as mental ability. Emphasis on methods, means, or ways of performance in an environment were felt to be of utmost importance in the project in view of the background of the population involved.

The Research Population

The population with which the project was concerned were students who in all instances came from environments much more protective than the colleges to which they were planning to go, whether they were from residential schools for the blind or from regular public schools. It should be noted that the sample with which the project dealt, both in the experimental and control groups, were high school graduates with no on-campus college experience or education. Previous progress reports of the project mentioned the enrollment in the course of upper classmen, some of whom had not attended college after the loss of sight but some who had. Their enrollment for training during the time of the college preparatory courses could not be ethically denied. Their presence in the course may have had some impact on the younger students but the impact was believed to be much the same as a recent high school graduate would face in college classes with the GI's or other more mature and experienced classmates.

All of Estimated College Potential

The population which composed the research groups, both experimental and control, had been screened to some extent by the rehabilitation agencies that referred them. All were seen by their counselors as college potential even though the fact of enrollment in the college preparation was some indication of the need for additional evaluation of preparation of the experimental group. The control group did not come to the facility for the additional evaluation or training but the fact of their enrollment in college as a client of a rehabilitation agency indicated the assessment of college potential by the rehabilitation counselor. There were some in the control group--but a limited number only--who would have enrolled in the college preparation course if the facility had been able to admit them. The readiness of the counselor to enroll them and the student's readiness to accept the training if it had been available is a slight indication of the similarity of the experimental and control population.

Factors Delimiting the Population and Determining the Research Sample

When the project was in the planning stage, it was hoped that the population of the experimental and control groups could be equally matched in number, school background, and social background. Ideally, the project anticipated a total research population at the end of the three-year period of 180 in both groups--90 in the experimental group and 90 in the control group.

This was the ideal but other factors worked to modify this idealistic concept. Since the research project was set in a functional operation of a rehabilitation facility, it was anticipated that all persons enrolled in the course and who made up the experimental population might not be eligible for the research sample. The criteria of eligibility set up in the project application would normally be the first control factor to delimit the project population and determine the research sample. The criteria eliminated persons who had previous college training and also the high school juniors unless they later became graduates.

The total enrollment in the course during the three years was ninety-four. When this number was reduced by those who had previous college work and those of junior status to meet the criteria of eligibility, only seventy-six remained eligible for the research sample as shown in the following table:

Table 3 Eligible Experimental Population

	Enrolled	Ineligible	Juniors	Total Eligible
Number	94	9	9	76
Percentage	100%	9%	10%	81%

Consequently, seventy-six is the possible population from which the research sample could be taken. The "Total Eligible" is the number that met the research criteria which required that they be:

1. graduates of secondary schools
2. chosen by their rehabilitation counselors as college potential
3. who had no college education

Percentagewise, of the ninety-four enrolled in the course, approximately 19 percent were ineligible by the criteria set up in the project application because they were either juniors or previous college students. Consequently, these two factors delimited the possible population sample for the research study to 81 percent of the trainees who were enrolled during the three-year period and reported in the three previous annual progress reports.

In addition to the foregoing two factors set by eligibility criteria, two other factors over which the facility and researchers had no control came into play to further limit the number in the research sample. These factors should be called the uncontrolled attrition factors since they came into play more or less as normal circumstance instead of being controlled by the criteria. Too, it should be borne in mind that social studies concerned with persons in a functional setting cannot be controlled as they would be in a laboratory setting. These factors of uncontrolled attrition refer to the number of persons:

1. who failed to enroll in college
2. the ones with whom no on-campus follow-up interview could be arranged

Of the seventy-six eligible persons, twelve failed to enter college and eleven who entered could not be used in the research sample since no follow-up interview could be made with either them or their college instructors. The final, nearest percentage of the eligible experimental population to be included in the research sample is shown in the following table:

Table 4 Experimental Research Sample

	Eligible	No Entry	No Interview	Research Sample
Number	76	12	11	53
Percentage	100%	16%	14%	70%

Table 4 also shows that of the eligible seventy-six, only sixty-four entered college.

The four factors, two set up by the criteria of eligiblity and two set up by the uncontrolled attrition, delimited the prospective experimental population group of ninety-four to a final experimental research sample of fifty-three.

The control population was referred by rehabilitation counselors working in the states from which the experimental population had come. Their number was smaller and all had enrolled in college. Only one of the four factors determining the experimental sample came into play to delimit the control population. This was the factor of uncontrolled attrition. The circumstances which prevented on-campus interviews with the control group were the same uncontrolled attrition factors that prevented on-campus interviews with the experimental group. This factor, however, reduced the eligible control population from the sixty-five enrolled to forty-nine in the research sample.

The difficulty of arranging follow-up interviews on a college campus is reflected to some extent in the effect this delimiting factor had on both groups as is shown in the foregoing table. A consolidated view of the effect of the delimiting factors determining the final number in the research sample for both groups is shown in the following tables:

Table 5 Delimiting Factors

Experimental Population							
Year	Enrolled	Ineligible	Juniors	Total Eligible	No Entry	No Interviews	Research Sample
1963	24	6	5	13	5	0	8
1964	35	2	4	29	2	4	23
1965	35	1	0	34	5	7	22
TOTALS	94	9	9	76	12	11	53

Control Population							
Year	Enrolled	Ineligible	Juniors	Total Eligible	No Entry	No Interviews	Research Sample
1963	10	0	0	10	0	3	7
1964	28	0	0	28	0	10	18
1965	27	0	0	27	0	3	24
TOTALS	65	0	0	65	0	16	49

The seven headings in the foregoing table of comparison are stated identically and have identical meaning except one. The first heading, "Enrolled," has different meanings for the two groups. In the experimental group table, all persons enrolled in the college preparation courses are counted under this heading although they did not later enter college. In the control group table, the number listed under this heading entered college although they were not all included in the final research sample. All sixty-five of the control group enrolled were eligible by the criteria of eligibility and there were no juniors or ineligibles to become delimiting factors. Nevertheless, all who were eligible in both groups could not be included in the research sample. Instead of the 180 idealistically anticipated, the final research sample was only 102--fifty-three in the experimental and forty-nine in the control sample.

Staff Evaluation, an Undetermined Factor

An additional factor of methodology in the functional rehabilitation project was that of staff evaluations and recommendations given to rehabilitation counselors and also interpreted to students in the experimental group. Such staff evaluations and recommendations regarding college attendance may have been a factor of unknown weight in setting the research sample in the experimental group. Such evaluations were inherent in the facility's policy and service responsibility to referring agencies, as well as a stipulation in the project. In 1963, of the thirteen eligible for the research project, six were evaluated to be doubtful college potential. While one of the six was a junior and was seen to need a second year of college preparatory training before being enrolled in college, the recommendation for a second year of training was not followed. However, after graduating from secondary school one year later, this person was admitted to college as a non-degree candidate and included in the research sample of eight for that year.

In 1964, of the twenty-nine eligible for the research sample, ten were evaluated to be of questionable or doubtful readiness for college enrollment. Of the ten questionable candidates, seven enrolled for the fall term immediately following the college preparation course, one enrolled in an additional preparation course and was admitted to college the following term, one delayed admission one year, and one changed objectives and did not enter college. Nine of the ten questionable, or questionable candidates for college as evaluated by the facility staff, are included in the research sample.

In 1965, of the thirty-four eligible to be in the research project population, there were seven of questionable college potential and two who did not complete the course (one because of death and the other a dropout). Of the seven seen as questionable college candidates, five entered college and all but one with whom a follow-up interview could not be arranged are included in the research sample.

Of the fifty-three persons finally included in the research sample, twenty-three were seen as being of questionable college performance capability. Of the twenty-three, fifteen were enrolled in college and have been included in the follow-up research project. Their performance in college will be reported in the section on results of study.

Sample Population Characteristics

Early planning envisioned matching the experimental and control groups as nearly as possible with respect to "numbers, sex, age, race, school background, visual impairment, cultural, economic, and geographic backgrounds."[10]

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[10] Project application, p. 12.

Sex Distribution

Table 6 Sex and Distribution of Combined Research Sample

	Experimental Group			Control Group		
	Male	Female	Total	Male	Female	Total
1963	6	2	8	5	2	7
1964	13	10	23	10	8	18
1965	10	12	22	18	6	24
TOTAL	29	24	53	33	16	49

The ideal of having an equal number of male and female members in the sample could not be attained. From the foregoing table the ratio of males to females is seen. The combined sample of sixty-two males and forty females, a ratio of approximately three to two, is very typical of the present college population distribution, but the separate samples are less typical. The experimental sample, being almost equal in males and females, is more representative of blindness in the general population than it is of the college population. The ratio of females in the experimental sample is much higher than it is in college population. However, the control sample with a ratio of males to females of two to one is more representative of the general college population of 1963 than of 1965, which is the latest published report.[11]

Significance of Sex Distribution

The significance of this difference can only be surmised, but in this study note should be made of it. In 1963 the ratio of males to females enrolled in college was almost exactly two to one, as it is yet in some states. These states have felt they were suffering a loss in human resources by this disparity.[12] In 1965, however, this ratio of the general college population had changed to three to two, approximately. The cause for the change in ratio is unknown. Since some circles were feeling that the failure of the capable female high school graduate to enter college represented a loss to society, the favorable change from 1963 to 1965 may represent better guidance services. If this be true, it would appear that the experimental sample had been the subject of more guidance than the control group.

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[11] Opening Fall Enrollment in Higher Education 1965, Office of Education, Circular No. 796. Washington, D. C.

U. S.	Total	Male	Female
1963	4,800,332	2,972,344	1,827,088
1964	5,320,294	3,268,188	2,052,106
1965	5,967,411	3,652,675	2,314,736

[12] In and Out of College, op. cit., p. 72

Age Distribution and Significance

Age distribution in the two samples may be seen in the following table:

Table 7 Age Distribution of Research Sample

	Experimental Group								Control Group								
	Male				Female				Male				Female				
	17	18	19	20+	17	18	19	20+	17	18	19	20+	16	17	18	19	20+
1963	0	3	2	1	0	1	1	0	2	2	1	0	0	0	1	1	0
1964	2	4	3	4	3	4	1	2	3	5	2	0	1	1	4	2	0
1965	1	3	4	2	1	7	3	1	3	11	3	1	0	1	2	2	1
Total	3	10	9	7	4	12	5	3	8	18	6	1	1	2	7	5	1

An analysis of the age factor table reveals that 91 percent of the experimental sample was under age 20 and 9 percent were 20 years of age or more. The mean age of this sample was 19 and ranged from 17 to 29. In the control sample 96 percent were under 20 and 4 percent were 20 years of age or more with a mean age of 18 and a range from 16 to 36. No general freshman age mean is known at this time, but it is estimated that with fewer ex-soldiers being enrolled now, it is very close to 18. If this is true the control sample is very typical of the general college freshman population. However, one school for the blind from which data was obtained reports the mean and median age of 19 for its current graduates.[13] Consequently, the experimental sample is more typical of blind freshmen than it is of the general freshman population.

Guidance information also indicates that the older the graduate, the less the motivation toward college.

An individual case study of both samples age 20 and above, indicates several factors that could be important. There were ten persons in the experimental and two in the control sample age 20 and above. Of the ten in the experimental sample, three were recent graduates, although one had experienced considerable academic difficulty in attaining graduation and was twenty-nine years of age. The two recent graduates in the control sample had experienced interruption of their education but not for academic reasons. Seven of the ten persons in the experimental sample, age 20 or above, experienced interruption of school before graduation of one year or more, the longest interruption being eight years.

There was considerable evidence in the case record of the counselors' concern about the college potential and need for evaluation for all ten persons in this age bracket of the experimental sample. This concern may account for the fact that in this age bracket the number was five times greater in the experimental than in the control sample.

Ethnic Groups of Samples

Matching of ethnic groups was not possible. No Negroes were referred for the college preparation course. The experimental sample was composed of the following: one Indian, six Spanish-Americans, and forty-six Caucasians. The control group was composed of five Negroes and forty-four Caucasians. No comparisons between ethnic samples will be attempted between the experimental and control samples.

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[13] Unpublished report. Superintendent Arkansas School for the Blind, 1966.

School Background of Samples

School background was a factor felt to be important to the study. There were three types of backgrounds: residential schools for the blind, regular public high schools, and private or other. The following table shows the school background of the two samples for each year:

Table 8 School Background of Students for Each Year of Project
Code: R=Residential P.S.=Public School P=Private or other

Year	1963						1964						1965					
	Exper			Control			Exper			Control			Exper			Control		
School	R	PS	P	R	PS	P	R	PS	P	R	PS	P	R	PS	P	R	PS	P
Number	8	0	0	3	2	2	10	7	6	9	5	4	14	5	3	10	14	0

In the experimental sample, there were thirty-two from residential, twelve from public, and nine from private or other type schools. In the control sample there were twenty-two from residential, twenty-one from public, and six from private or other type schools. No positive indications or trends of significance is seen. It should be observed, however, that a much larger percentage of the experimental sample came from residential schools as shown in the following table:

Table 9 Ratio of School Background in Research Sample

	Residential	Public School	Private or Other
Experimental	60%	23%	17%
Control	45%	43%	12%

The dominant percentage of the residential background may infer the counselors' awareness of the difficulties to be faced in such a transition. It, however, may indicate that more students are referred from the residential schools than from the other types of schools.

Definitions of Visual Impairment

Neither the experimental nor the control samples were delimited on the basis of the degree of present vision since all met the definition of legal blindness of their sponsoring rehabilitation agencies. Generally stated, this definition of blindness includes persons whose "Visual acuity is 20/200 or less in the better eye with best correction or in which the field of vision is restricted to 20 degrees or less." This definition was made in 1936 by the American Medical Association and has been accepted by the Social Security Administration, the Internal Revenue Service, and the state and federal rehabilitation agencies. There are more complicated, refined, definitions such as used by the Model Reporting Area for Blindness Statistics (MRA). The MRA is a voluntary association of states which maintains registers of persons with severe visual impairments according to a prescribed classification of blindness. The term "blindness," as used by the Model Reporting Area of Blindness Statistics is as follows:

> "Visual acuity of 20/200 or less in the better eye with best correction or visual acuity of better than 20/200 if the widest diameter of the field of vision subtends an angle no greater than 20 degrees. Individuals with a progressive eye condition which does not yet meet this definition are excluded."[14]

The register maintained under the requirements of the Model Reporting Area for Blindness Statistics lists the following eight degrees of vision:

1. Absolute blindness
2. Light perception
3. Light projection
4. Less than 5/200
5. 5/200 but less than 10/200
6. 10/200 but less than 20/200
7. 20/200
8. Field restriction

While these eight classifications of visual degrees are important for statistical and other purposes of serving the visually handicapped, they were not used by rehabilitation agencies in selecting candidates for college.

Classifications Used in This Study

Educators in the schools for the blind advised that such a distinction in the degree of vision would serve no practical purpose in selecting or guiding prospective college students.[15] For this study three functional classifications have been advised:

1. totals
2. partials
3. readers and writers

Since these are functional classifications instead of medical, they need further definition:

1. Totals are those persons who cannot read with the best optical aid
2. Partials are those persons who read large print with or without an optical aid, can use a typewriter but cannot use handwriting for notes and examination and may require reader services in college
3. Readers and writers are those persons who read print, use no readers and take notes and examinations by handwriting even though they may use taped and recorded books in addition

There may not be a clear-cut distinction between the partials and the readers and writers in some functions. Both may use large print and the typewriters, but the readers and writers can be distinctly separated from the partials on the basis of function in that they use no reader service and take notes and examinations in handwriting.

On the basis of intake information at the time of enrolling, both the experimental and control samples, the number of males and females in each of the functional classifications mentioned is shown in the following table:

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[14] "The Model Reporting Area for Blindness Statistics," Statistical Report, 1964.

[15] Advisory Committee Members and Conference AAIB Members. 1966.

Table 10 Distribution of Degree of Vision in the Research Sample
Code: T=Total P=Partials RW=Readers and Writers

Sex	Experimental						Control					
	Male			Female			Male			Female		
Degree of Sgt.	T	P	RW	T	P	RW	T	P	RW	T	P	RW
1963	2	4	0	2	0	0	0	1	4	1	0	1
1964	7	1	5	5	2	3	2	1	7	2	4	2
1965	8	2	0	9	1	2	7	6	5	3	2	1
Totals	17	7	5	16	3	5	9	8	16	6	6	4

According to the table, in the experimental sample there were thirty-three totals, ten partials, and ten readers and writers. In the control sample there were fifteen totals, fourteen partials, and twenty readers and writers. Since there were more than twice as many totals, 100 percent more, in the experimental sample than in the control sample and twice as many readers and writers, 100 percent more, in the control sample than in the experimental, the degree of visual impairment may have been a dominant factor in determining the need for preparatory training. The ratio of partials in the two samples was more nearly equal than the other two classifications but the control sample of partials was 40 percent greater in number than the experimental sample. On a central tendency curve, the experimental sample would be strongly skewed to the totals and the control sample would be almost equally skewed to the readers and writers.

Ability Levels of the Samples

Ability levels of the two samples may be seen in the following tables of intellectual ability test results. Test results were obtained for the experimental sample from the admission data or by the facility psychologist after admission. For the control sample ability ratings were reported by the rehabilitation counselors on the comparative data form.

Table 11 Distribution of Ability Levels in Research Samples
Code: A=Average BN=Bright Normal S=Superior VS=Very Superior

Experimental Group

Year	Average				B-N		S		Very Superior					
	90-99		100-109		110-119		120-129		130-139		140-149		150 up	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1963	0	1	0	0	1	1	3	0	2	0	0	0	0	0
1964	0	0	2	3	3	2	4	3	4	2	0	0	0	0
1965	0	0	0	3	3	3	4	4	3	1	1	0	0	0
Totals	0	1	2	6	7	6	11	7	9	3	1	0	0	0

Control Group

Year	Average				B-N		S		Very Superior					
	90-99		100-109		110-119		120-129		130-139		140-149		150 up	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1963	0	0	0	1	1	0	2	1	0	0	2	0	0	0
1964	0	1	2	0	4	3	0	2	3	2	1	0	0	0
1965	1	0	2	0	8	4	2	0	1	2	3	0	1	0
Totals	1	1	4	1	13	7	4	3	4	4	6	0	1	0

A composite score of the experimental and control samples for the three years gives the following comparison of ability range:

Table 12 Range of Ability Levels of Both Samples

Experimental Sample				Control Sample			
Low	Grand Mean	High	Range	Low	Grand Mean	High	Range
95	119	143	48	96	121	150	54

The differences in range as well as the mean scores are very slight. The distribution within the groups did vary. In the experimental sample thirty-one persons or 59 percent were above the mean level; whereas, in the control sample twenty-one or 43 percent were above the mean.

The three measures of central tendency--mean, median, and mode--show the distribution for both groups: experimental mean 119, median 121, mode 123; control - mean 121, median 117, mode 115.

The standard deviation of measured intelligence for each of the groups to the nearest tenth are: experimental 11.0 and control 13.0. In the experimental sample, thirty-six cases or 68 percent of the cases fell within one sigma plus and minus with fifty-one cases or 98 percent within the second sigma plus and minus and the total of fifty-three or 100 percent within the third sigma plus and minus.

Table 13 Standard Distribution of Ability

		Experimental Sample			
		← 68% →			
2%	9%	30%	38%	19%	2%
1 case	5 cases	16 cases σ = 11	20 cases	10 cases	1 case
$3\sigma-$ 86	$2\sigma-$ 97	$1\sigma-$ m = 119 108 md = 121 mode = 123	$1\sigma+$ 131	$2\sigma+$ 142	$3\sigma+$ 153
		Control Sample			
		← 72% →			
0%	12%	45%	27%	14%	2%
0 cases	6 cases	22 cases	13 cases	7 cases	1 case
$3\sigma-$ 82	$2\sigma-$ 95	$1\sigma-$ σ = 13.3 108 m = 121 md = 117 mode = 115	$1\sigma+$ 134	$2\sigma+$ 147	$3\sigma+$ 150

In the control sample thirty-five cases or 72 percent of the cases fell within one sigma plus and minus with forty-eight cases of 98 percent falling within two sigma plus and minus with one case or approximately 2 percent falling in the third sigma plus.

The experimental sample fits quite neatly the general rule of normal distribution in that 68 percent of the cases fell within one standard deviation, 98 percent within two standard deviations, and 100 percent within three standard deviations. There is a slight deviation in the control sample since 72 percent of the cases fell within the first sigma with a slight negative skew in the first sigma; whereas, the experimental sample showed a slight positive skew in the first sigma.

From the foregoing comparisons, it is felt that the difference in standard scores and the range of distribution of ability are close enough to permit a valid comparison of college performance of the two samples by central tendency measures.

Economic and Cultural Factors of the Samples

The cultural and economic backgrounds of the research samples were very similar. Economically, the middle-class level was the predominant (50 percent) background with approximately one-fourth of each group being in either the welfare or substantial income levels. Parental educational backgrounds were also mixed. Approximately one-fourth of both groups came from homes in which one or both parents had some college education. However, about one-seventh of each group came from homes in which one or both parents held a college degree. The predominant educational background of both groups was below the tenth grade.

For group comparisons the economic and cultural backgrounds seem well enough matched to create no significant difference.

Geographic Factors

The research samples came from thirteen states ranging from the East Coast to the Northwest. The geographic distribution of the samples and the colleges they attended are representative of the cultural and educational standards of the major portion of the country with the exception of the far Northeast. From this factor it would seem the results could be regarded as widely representative.

The following table gives the yearly geographical distribution and the totals from each state represented.

Table 14 Yearly Geographical Distribution and Sex of Both Groups

	Experimental							Control							
	1963		1964		1965		Total	1963		1964		1965		Total	Gd. Total
	M	F	M	F	M	F		M	F	M	F	M	F		
Ariz.	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
Ark.	0	0	2	1	2	2	7	0	0	0	0	2	0	2	9
Ind.	0	0	3	0	1	1	5	0	0	0	0	1	1	2	7
La.	0	0	3	0	3	1	7	1	1	1	1	3	1	8	15
Mo.	0	0	1	0	0	2	3	0	0	2	1	1	1	5	8
N.M.	1	0	1	1	1	2	6	0	0	1	0	0	2	3	9
Ohio	0	0	0	1	0	0	1	0	0	1	3	0	0	4	5
Okla.	1	1	2	2	0	0	6	0	0	1	0	2	0	3	9
So.D.	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2
Tenn.	4	1	1	1	1	1	9	4	1	1	0	3	0	9	18
Texas	0	0	0	0	1	2	3	0	0	1	2	5	0	8	11
Utah	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1
Va.	0	0	0	2	1	0	3	0	0	1	0	1	1	3	6
Total	6	2	13	10	10	12	53	5	2	10	8	18	6	49	102

CHAPTER VI

DATA COLLECTION AND ANALYSIS

Method of Data Collection

Data were collected on the two samples from casework files and personal interviews. In the case of the experimental sample which received services at the facility as well as being involved in research, the applications for admission submitted by the rehabilitation counselors gave a fairly extensive medical, social, psychological and educational workup. Counselors for the control sample submitted that data from their case files on the Comparative Data Form.

Statistical and Interpretation Methods

The data from all standardized measurements and college grade reports are treated statistically by measures of central tendency, mean, median, and mode, and measures of standard deviation, when justified. Content analysis of interview results are reduced to frequency counts or percentage ratios in all instances of comparison that permitted such a count. Some sections of the controlled interview used in the on-campus follow-up were designed on a 5-point scale. These results are stated in frequency counts to be rated with some interpretation since such a rating is more subjective than objective. The controlled interview forms for the on-campus follow-up were compiled by the research advisory committee and the college preparation course staff. They consisted of five different survey forms to control the interviews with six different persons on each campus, including the student.

On-Campus Data Collection

The survey form by which the data was collected was the same for the experimental and control subjects except in one section, the evaluation of the college preparatory course. The experimental subjects were asked to review and, in retrospect, evaluate activities of training given in the course by giving each a ranking on a 3-point scale of "very helpful," "some help," or "no help." They were also asked to name the degree of emphasis each area should receive in future courses on a 4-point scale of: "more," "same," "less," or "none." Since the control sample had not been enrolled in the course, they could not be asked to give an evaluation in retrospect, but they were asked to project from their experiences an estimate of the value such activities of training might have had for them. Their rankings were limited to a 3-point scale of "very helpful," "some help," or "no help." Control students could not be expected to say whether specific activities of training should receive more or less emphasis; consequently, this section of the survey form was eliminated from the interviews with the control subject.

The on-campus follow-up data were gathered, when possible, from six different college personnel representing the various levels of college organization: the dean for the administration, the English instructor and one other instruction for instruction, the academic advisor for guidance, and the dormitory supervisor for the housing service. The volume of inquiry was rather extensive in each survey. There were fourteen main questions and five subquestions for the dean, for each professor--English and other--there were thirteen main questions and twenty subquestions, for the advisor there were fifteen main questions and fifteen subquestions, for the dormitory supervisor there were fourteen main questions and twelve subquestions. The experimental subject was faced with twenty-nine main questions and seventy-seven subquestions; whereas, the control subject was faced with the same twenty-nine main questions and fifty-nine subquestions. A total possibility of approximately 14,000 inquiries were structured in the survey used in the 102 follow-up studies. As will be seen all anticipated college personnel could not be interviewed.

Basis of Comparisons

The project proposed as one of the evaluative criterion to compare the grade levels by individual students in colleges of comparable rank, i.e., North Central Association of Colleges and Secondary Schools.[18] College offering liberal arts and general academic programs are accreditation by six regional accrediting associations. Such accredition is applied to the entire institution. It indicates that each constituent unit is achieving its own particular aims satisfactorily, although not necessarily all on the same level of quality.[19] Although there may be differences in level of quality, accreditation by one of these associations affords a recognized standard for comparison of educational achievement.

The colleges and universities in which students involved in this research were enrolled were members of four of the six regional accrediting associations as follows:

1. North Central Association of Colleges and Secondary Schools, Commission on Colleges and Universities
2. Southern Association of Colleges and Schools
3. Northwest Association of Secondary and Higher Schools Commission on Higher Schools
4. Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities and Accrediting Commission for Junior Colleges.

Seventy colleges and universities located in twenty states were involved in the study. Thirty-two colleges were in the North Central, thirty-one in the Southern, two in the Northwest, and one in the Western Association. Forty-five were public and twenty-five were privately controlled colleges. According to the source previously cited, three of the colleges which belonged to no national or regional accrediting association were under private control and one was under public control.[20] The following table will show the distribution of experimental and control and enrollment in the colleges with regard to affiliation with accrediting associations:

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[18] Project Application, p. 12.

[19] "Higher Education," Education Directory 1965-66, Part 3, p. 7, Office of Education, Department of Health, Education and Welfare.

Table 15 Accreditation of Colleges, Type of Control, and Enrollment in Each

Accrediting Associations	No. of Colleges	Public: No. Stud.		Private: No. Stud.		Student Totals
		Exper.	Control	Exper.	Control	
North Central	32	20	15	8	3	46
Southern	31	14	23	7	5	49
Northwest	2	1	0	1	0	2
Western	1	1	0	0	0	1
None	4	0	1	1	2	4
TOTAL	70	36	39	17	10	102

Since the major portion of students were enrolled in schools belonging to the two associations of the North Central and the Southern, the comparison by central tendency measures will be limited to these two associations in fulfilling this criterion of evaluation.

Types of Control and Size of College

The size of college enrollment and the type of control are factors of comparison which are often considered by both parents and school counselors. Type of control refers to whether the college is a state or private school as listed in the Education Directory. The basis of comparison is made in the study for whatever it may be worth as a guidance factor for the blind prospective college student and their rehabilitation counselors.

It is the opinion of some in educational circles that a student may be productive in one college but not in another.[21] On this presumption the choice of a college may be a decision almost as important as the decision to attend college. Briefly stated, there may be a mutual compatibility between the college and the student in which one college meets the needs of the student better. In the evaluation of experimental subjects and in their recommendation to counselors, the staff recognized this philosophy and stated it as a qualification of their evaluation. Such qualified recommendations were classed as doubtful college candidates and will be further discussed in the chapter on results. Only one of the experimental sample enrolled in a college having no regional or other classified accredited membership as listed in the 1965-66 Education Directory. Three of the control sample attended such schools. For students enrolled in non-accredited schools, a comparison of grades on an individual basis will be made. This may, in a very limited way, suggest guidance in choosing a school of higher education when the choice needs to be made more for personal development than for academic excellence.

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[20] Ibid.

[21] In and Out of College, p. 1 ff, Report 1, October, 1964, Oklahoma State Regents for Higher Education, State Capitol, Oklahoma City.

Range of Enrollment

Campus populations involved in this study ranged from 125 to 27,000. Some students attended local colleges belonging to a statewide system of higher education. This statewide enrollment was used by the local college for competitive evaluation of academic performance, but this study will use the grades of students as they were reported by the local schools without identifying statewide systems.

So far as can be determined, there is no official or recognized level of enrollments that classifies a college as a large or small college. A recent popular magazine article considered a college with 1,000 students to be a small college.[22] The opinions of the research advisors indicated that there might be some significant change in academic performance when the enrollment exceeded 2,000.

The following table will show the number of public and private schools, their sizes, and the number of students enrolled in each:

Table 16 Size of College, Type of Control, and Enrollment

Code: E=Experimental			C=Control				
Number of Schools	Public		Size of School Enrollment	Private		Student Total	Number of Schools
	E	C		E	C		
0	0	0	200 and less	1	2	3	3
0	0	0	300-500	3	0	3	3
3	1	3	600-1,000	5	3	12	8
9	8	5	1,100-2,000	3	2	18	5
33	27	31	2,100-up	5	3	66	6
45	36	39		17	10	102	25

An analysis of the enrollment as shown in the foregoing table gives a basis for a practical comparison of three sizes of schools. Three percent of the research sample was enrolled in schools of less than 200, three percent in schools from 300 to 500, and twelve percent in schools from 600, to 1,000 students or a total of eighteen percent enrolled in schools of less than 1,000. Eighteen percent were enrolled in schools of 1,000 to 2,000 and sixty-four percent were enrolled in schools of more than 2,000. These three sizes of schools give a better basis for comparison in this study than two sizes, large and small. Consequently, in the results a comparison of the research samples will be made on the three sizes of schools' enrollment: less than 1,000; 1,000 to 2,000; and 2,000 up.

It is possible that the size of the school and its purpose may be more important to the student than its academic rating. Academic excellence is not judged by size alone since schools of varying sizes belong to the same accrediting association. To the blind student the size of the campus and complexity of its walkways may be an important factor in his orientation and mobility as will be noted from the problems found in campus follow-up results. The campus sizes ranged from a city block to hundreds of acres and from one combined administration and classroom building to scores of buildings.

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[22] Christopher Wren, Look Senior Editor, "The Case for the Small College," Look Magazine, October 6, 1966.

CHAPTER VI

RESULTS: CAMPUS FOLLOW-UP STUDY

Impressions of Administrative Levels

The campus follow-up to determine the impressions of the administrative level personnel resulted in obtaining the impressions of college deans concerning 96 of the 102 students, 51 regarding the experimental and 45 regarding control samples. The interviews were held with the dean of the college, the academic dean, or in some instances, with the dean of students.

The interviews were structured by a survey form of fourteen main questions and five subquestions.

Three questions pertaining to general impressions were asked. The first question, "As you have observed this student has his behavior been outstanding, either positively or negatively?" Sixty-threee percent of the deans ranked the behavior of the experimental sample from average to superior, six percent saw them as slightly below average, and thirty percent were not well enough acquainted with the students to give an evaluation. With the control sample, seventy-five percent of the deans ranked the students' behavior from average to superior, three percent ranked them slightly below average, and twenty-two percent were unacquainted with the students. In the experimental sample the number ranking average, above average, and superior were almost equally divided, while the control students ranking superior numbered seven times as many as those ranked average and three times as many as ranked just above average.

The deans' impressions as to how the blind students seemed to fit into a college environment gave both samples a clear recognition of belonging. Seventy percent rated the experimental sample fitting from average to superior, distributed almost evenly between average, above average, and superior.

The control sample was rated by seventy-five percent of the deans from average to superior, again, with the superior rated number being five times as great as the number rated average. Twenty percent of the deans were unacquainted with the experimental students and five percent rated them as fitting into the college environment slightly less than average.

Another question dealt with the attitude of the blind students as they were known to the deans. The question, "Do you know if he seems to expect any special privileges because of his blindness or poor vision?" was answered as follows: Seventy-two percent of the deans ranked the experimental students' freedom from this to range from average to superior with the number ranked superior being three times as great as those ranked average. However, twenty-nine percent of the deans did not know whether the student expected special privileges because of blindness. In evaluating this attitude of the control students, seventy-four percent saw them above average with the number rating superior being seven times as great as the ones rating average and twenty-six percent did not know the students' attitudes.

General Impressions of College Personnel on All Levels

The personnel on other levels of college organization were: instructors, English and other; the academic advisor; and the dormitory supervisor. The way the dean and each of these persons saw the blind student with respect to the three factors of behavior, positive or negative; how they "fitted into" a college environment; and the expectation of privileges because of blindness is shown in Table 17.

Table 17 General Impression of College Personnel of Blind Students:
Code: BA=Below Average AA=Average and Above
U=Unknown

	Experimental			Control		
Behavior	BA	AA	U	BA	AA	U
English Instructor	4%	92%	4%	0%	97%	3%
Other Instructor	2%	96%	2%	5%	90%	5%
Advisor	6%	92%	2%	2%	90%	8%
Dormitory Supervisor	1%	99%	0%	1%	98%	1%
Dean	6%	63%	30%	3%	75%	22%
How "Fits In"	BA	AA	U	BA	AA	U
English Instructor	7%	90%	3%	11%	88%	11%
Other Instructor	2%	90%	8%	4%	90%	6%
Advisor	10%	90%	0%	10%	76%	14%
Dormitory Supv.	3%	97%	0%	10%	90%	0%
Dean	8%	70%	22%	5%	75%	20%
No Privileges Expected	BA	AA	U	BA	AA	U
English Instructor	10%	90%	0%	0%	100%	0%
Other Instructor	0%	100%	0%	2%	98%	0%
Advisor	6%	91%	3%	0%	92%	8%
Dormitory Supv.	10%	90%	0%	10%	90%	0%
Dean	0%	71%	30%	0%	74%	26%

The tabulations in Table 17 indicate an overwhelming positive attitude of college personnel toward blind students. This is a subjective area of inquiry. None of the personnel had given tests to determine their replies nor did the interviewer have a standardized measure to follow. Some difference in evaluations might have been given by each person if these questions had been asked at some other place in the interview instead of the beginning. Being placed at the beginning, however, afforded an approach that set the tone of the interview to be something more than a statically rigid "yes" or "no" inquiry. The degree to which this kind of beginning was helpful is indicated by the fact that all persons interviewed were helpful. Deans went to great length to set up interview schedules and rearrange them when planes were grounded. Instructors readily used their free moments for interviews. Only once did an instructor seem to see the interview as an inspection rather than a study, and in that instance there were extenuating circumstances.

The overwhelming ratings of average and above, shown in Table 17 may be a tribute to the generous impulses of the enlightened and highly educated people found in college positions. Sufficient differences are in evidence to confirm the interviewers impression that evaluations were thoughtfully made and blind students need not expect to go through college on the generous impulses of its faculty.

Blind students constitute a minority group in all colleges. It may be surprising that any of a minority group with such a singular trait as blindness and also small in numbers would be unknown but perhaps no other minority group is so well known to the faculty. For some unknown reason more of the experimental students were unknown to the dean than the control students. It is possible that control students traveled more on the campus than the experimental students. In large schools with more complex organizations, the dean's lack of acquaintance usually indicated the absence of problems. All dormitory supervisors were well acquainted with the students in both samples. It is significant that instructors who would be the ones most likely to be pressed for special privileges had no uncertainty in their evaluations in this area; whereas, in the general areas of "behavior" and "fitting into the environment" they were much less informed. Academic advisors, as shown in Table 17, were less acquainted with their students than either the instructors or the dormitory supervisors. However, advisors to the experimental sample were better acquainted with their students than the advisors to the control sample. This may have been due to the greater prevalence of total blindness in the experimental sample, but the reason was not ascertained.

Appraisal of Blind Students and Fellow Students Attitudes

Inquiries were made of the instructors, the advisors, and the dormitory supervisors to evaluate the attitude of the blind student toward fellow students and the fellow students' attitude toward blind students. One question, "Does he ever impose on his classmates?" was directed to instructors, and a similar one, "Does he ever impose upon his roommate?" was directed to dormitory supervisors. The replies of the instructors indicated no difference between the samples and only two percent of the instructors felt that imposition took place. Each of these instances were concerned with note-taking in class. Students who depend on others to take notes for them were the offenders. Classmates seemed to readily tolerate the use of the Braille slate and other methods but seemed to question the practice of borrowing notes or expecting a classmate to make an additional copy. The dormitory supervisors felt in one case of an experimental sample and two of the control sample that imposition on the roommate occurred. Students in both samples expressed concern about the use of recording equipment and readers being an imposition on their roommates. In each instance of concern by the blind student, dormitory supervisors confirmed that arrangements to prevent such imposition had been made.

The question, "What do you feel the general attitude of other students is toward blind students?" was answered in such a manner that one must conclude that it was positive rather than negative. One described it by saying that it was one of consideration but not maudlin in sympathy or curiosity. All felt that needed assistance in going from one place to another or in transporting equipment was voluntarily given as a "good turn" with no hint of imposition. College personnel felt that fellow students expected the blind student to act responsibly for his own adaptive services, such as reader services. This was seen by college personnel as a normal attitude. However, some readers were fellow student volunteers, but interviews with the blind students left no doubt that the volunteer felt his own college work had priority.

Academic Performance of Blind Students

Evaluation of academic performance of blind students consisted of a sampling only. It inquired into the performance of the student in an academic setting instead of a gathering of grades. Interviews were limited to the English and one other instructor. Campus follow-ups were made sometimes before mid-term grades were in. Deans were well informed if academic problems of serious nature had arisen. In many instances deans obtained special reports in preparation for the interview even though they were not personally acquainted with the student. Dormitory supervisors had over-all information since they had the responsibility for monitoring study hours of freshmen with low marks of achievement. Instructors were quite professional about revealing a student's exact grade but were frank in stating whether or not the student was having problems of an academic nature.

Quartile Estimates

The inquiries about academic performance were directed more to determining how the blind student approached his work than on learning his grades. It was found that few instructors used the quartile system of ranking; however, in most instances an estimate only of quartile rankings were made. Estimates distributed the experimental sample in the following order: seventeen percent in the first quartile, twenty-five percent in the second quartile, thirty-one percent in the third quartile, and twenty-one percent in the lowest quartile. The control sample ranked seven percent in the first quartile, forty-three percent in the second quartile, seventeen percent in the third quartile, and thirty-three percent in the lowest quartile.

Mannerisms in the Academic Setting

Some blind persons exhibit mannerisms such as covering the face with both hands, rocking motions of the head or carrying the head either down or to one side. Such mannerisms may be distracting in an academic setting. This study was concerned with such mannerisms and how they might affect academic performance and college acceptance. Inquiries regarding this pattern of behavior were directed to the professors and the dormitory supervisors only because of their advantages for observing the student. Professors observed and reported mannerisms which they attributed to blindness in ten percent of the experimental and eight percent of the control samples. Dormitory supervisors observed and reported such behavior in eight percent of the experimental and fifteen percent of the control samples. Professors were reluctant to describe the behavior as a distraction to either themselves or to the class. Dormitory supervisors more readily felt that any deviant behavior affected social relationships, but none had received complaints about distracting mannerisms from other college personnel.

Methods and Adaptations

Methods and adaptations used by the blind college student was felt to be a necessary inquiry of this study. Methods of taking notes, taking examinations, writing themes, getting information from the blackboard, doing assigned reading, taking laboratory courses, the use of the library, and traveling to and from the classrooms are personal competencies important to academic performance in college.

The Responsibility for Arranging Adaptations

It is felt by most workers in rehabilitation that the handicapped student is responsible for knowing and initiating the methods and adaptions he can use best. College personnel share this view fully because they feel that the blind person knows better than they how to make helpful adaptations. All instructors expressed a readiness to follow the initiative of the blind student in making needed modification. Some professors felt that method and learning were so interrelated that modifications would seriously interfere with teaching, although they, too, expressed a readiness to consider the student's suggestions.

Part of this study was concerned with how the blind student exercised responsibility in making adaptations because of blindness. Since administrative decisions might be involved as well as teaching effectiveness, inquiries on this factor were directed to the dean and the instructors. Inquiries of the deans indicated that fifty-three percent of the experimental sample and sixty-three percent of the control sample had taken responsibility for working out the adaptations. Inquiries of the instructors indicated that ninety-one percent of the experimental and eighty-eight percent of the control sample had taken the initiative in working out the adaptations needed in their classes.

Note-Taking Extent and Methods

An inquiry was directed to the professors and to the students to determine the extent of note-taking. The response of the professors indicated that eighty-eight percent of the experimental and seventy-four percent of the control sample took notes in class. The response of students indicated that ninety-two percent of the experimental and ninety-two percent of the control sample took notes.

Instructors were asked to describe the methods of taking notes used by the blind students. Their replies indicated several methods were used. Students surveyed on their methods closely coincided with the instructors replies. Table 18 lists the methods and extent by which they were used.

Table 18 Note-Taking: Methods and Extent Used

Instructors' Replies		Methods Used	Students' Replies	
Experimental	Control		Experimental	Control
55%	37%	Slate	62%	37%
32%	59%	Pencil	26%	51%
7%	0%	Steno-Mask	8%	0%
2%	0%	Braillewriter	2%	0%
2%	2%	Tape Recorder	2%	10%
0%	0%	Disc Recorder	0%	1%
2%	2%	Borrowed	0%	1%

While there are differences between the information given by instructors and students, there is an internal evidency that indicates the validity of the methods used and the extent to which they were used by the two samples. According to the replies of both sources, the slate and stylus was the method used most by the experimental sample and the pencil and paper method by the control sample. Those two methods were the most widely used by each sample.

Note-Taking Methods and Problems

Methods used by blind persons in note-taking sometimes create unfamiliar noises for a classroom situation and could be a source of distraction. This inquiry was directed only to the instructors. They were asked, "Does his note-taking distract his fellow students?" Replies to this question indicated that English instructors felt there was some distraction caused by the methods used in five percent of the cases in the experimental sample but no distraction in the methods used by the control sample. Other professors felt that in twelve percent of the cases the methods of the experimental sample created some distraction but the methods of the control sample created distraction in only six percent of the cases. Professors hastened to add that in the great majority of cases the distraction was minor but were distracting nevertheless. Some professors reported that the distraction to students soon subsided when they made a brief statement identifying the source of the noise. It was found that English courses used prepared materials that reduced the need for note-taking in class. This probably accounts for the different estimates given by the two instructors. While professors in certain departments prohibited tape recording of their lectures by any student, this limitation was not responsible for the low usage of this equipment for note-taking purposes. No objection was found to the use of recording equipment that permitted selective note-taking.

Blind Students' Appraisal of Note-Taking Methods

The advantages and disadvantages of the various methods of note-taking from the students' point of view were investigated. After each student identified his method of note-taking, the question was asked, "Are there any disadvantages in this method?" Sixty-three percent of the experimental sample said yes, and thirty-seven percent said no. Of the control sample, sixty percent said yes and forty percent said no. Since the Braille slate was the predominant method used by the experimental sample and pencil and paper was the predominant method used by the control sample and both methods ranked either first or second place with them, one must conclude that blind students yet are to find an entirely satisfactory method. While this general dissatisfaction was expressed, each felt that he was using the most efficient method known to him. "Too slow" was the most frequent criticism made of whatever method being used. Several students seriously, but wittily, explained that the problem was "note-taking, a necessary evil of college." Enthusiasm was expressed for the Steno-mask as a note-taking device by most of the students who used it. Some expressed dissatisfaction with it but continued to use it for lack of a better method. Students who used Grade III Braille with the slate expressed equally as much enthusiasm for this method as the students who relied on pencil and paper did for their method.

Methods of Taking Examinations

Examinations are an area of college requirements vitally related to academic performance. Inquiries about this performance were directed to the professors. In reply to the question, "How does he take tests and examinations?" it was found that five methods were used. With both samples the oral examination was the predominant method. It was used with the experimental sample in seventy percent of the cases and with the control in forty-seven percent of the cases. Student reports confirmed the accuracy of this estimate of performance. Usually the professor's secretary or a graduate assistant would read the questions to the student and record his answers. The written examination was used in twenty-three percent of the cases with the experimental sample and in forty-eight percent of the cases with the control. The techniques of this method varied from having the questions read to the student by an assistant, to permitting the student to take the questions and return the written paper the next day. Questions were given in Braille to the control sample in three percent of the cases but no Braille was used with the experimental sample. This method was exceptional. Questions in "big print" copy were used in two percent of the experimental cases but none used with the control. In six percent of the cases of the experimental and two percent of the control students used typewriter to take examinations. In some instances typewriters were used in the classroom with a reader reading the questions.

Where and When Examinations Were Taken

Students took the examinations at various places and times. The office was used in thirty-four percent of the experimental and thirty-seven percent of the control examinations. The classroom was used in twenty-seven percent of the experimental and thirty-seven percent of the control cases. Other places so designated for space wherever it could be found outside the classroom or professor's office were used in thirty-nine percent of the experimental and in twenty-six percent of the control cases. Examinations were given to the blind students at the same time his fellow students were taking them in eighty percent of the cases for both samples.

Modified Examinations

Some consideration was given blind students in taking examinations.

Instructors were asked, "Has it been necessary to modify test questions because of blindness?" Their answer was "yes" in six percent of the experimental and three percent of the control cases. A similar question was asked regarding grading. The question, "Is his blindness considered when test papers are graded?" The answer was "yes" for twelve percent of the experimental and nine percent for the control cases. In both cases, the modification of questions and the consideration given in grading papers, instructors felt they were trying to equalize the mechanics of performance rather than knowledge of the subject. A major consideration in grading was the determination of spelling or typographical errors. English instructors felt that the blind students were being deprived of a learning opportunity when they were unable to write themes during class. Laboratory instructors felt that only part of the value of such courses could be realized by blind students. Some instructors felt that no college student should be given consideration on typographical errors.

Written Assignments

Written assignments represented a problem area for blind students. Instructors felt that forty-eight percent of the experimental and forty-seven percent of the control students had difficulty with written assignments. Students confirmed the instructors impression. Forty-five percent of the experimental and thirty-six percent of the control group reported having difficulties with written assignments. While consideration was given in allowing extra time, ninety-four percent of both samples reported they were expected to turn in all written assignments. Six percent of each sample indicated they substituted other assignments for some written assignments. Written assignments without prior notice to be done in class or assignments to be prepared by the next class period frequently created problems of reader service, research time, and time for proof reading. Instructors felt that it was necessary to make allowances for the appearances of the papers in twenty-four percent of the cases for the experimental and in fifteen percent of the cases for the control students. English instructors found it necessary to make allowance more than other professors since form and appearance are important goals in that course. English instructors also felt concern when blind students purchased typing services. It was difficult to determine what elements of error or perfection could be the work of the typist rather than of the student. Such determination required personal conferences with the blind student. Students reported the use of other typists in only six percent of the cases for each sample. However, several English instructors enthusiastically showed samples of work done by blind students and felt that quality work could be expected of the blind students who had adequate background. With some degree of resignation many professors felt that the blind students' papers compared favorably with other freshman papers.

Class Participation

Class participation by blind students rated slightly above average as seen by professors. However, students rated themselves as participating about the same or slightly less than other students. There was no appreciable difference in participation of experimental and control samples.

Statements of professors and students indicated that class participation by freshmen except on an assignment basis was very limited.

Blackboards and Visual Aids

Classroom function involved the use of the blackboard and other visual aids, both of which present problems for blind students. Instructors were aware of this problem but their customary method of using the blackboard during class lectures helped the student get the information without a special effort on the instructors part. Instructors indicated that eighty-eight percent of the experimental and sixty percent of the control students could not read the blackboard or other wall charts. A negligible percent of students in either sample could read the board by the use of any optical aid. Instructors felt that the majority obtained the information on the blackboard by listening to them talk as they wrote on the board. They felt that only a small number made inquiry during or after class.

Inquiries of students confirmed the instructors impressions of the methods by which blind students obtained blackboard information. Ninety-eight percent of both samples reported that professors read aloud as they wrote on the board. The degree to which this satisfied the need for the information is indicated by the students' reply to the direct lead of question in this section. "How do you get information written on the blackboard?" The replies of both samples indicated that fifty-one percent was obtained by listening to the professor as he wrote, forty-five percent by asking the professor or others, and four percent by use of optical aids. When information was placed on the blackboard before the class assembled, students faced an additional problem in getting the information. They reported that they soon learned the instructor's pattern of work and took the initiative to ask either fellow classmates or instructors about such blackboard work.

Laboratory Courses

The use of blackboards and laboratory facilities posed similar problems for the blind student. Some students managed to substitute other courses for the ones requiring laboratory exercises. Other students found laboratory partners and worked together. Some science instructors, i.e., geology professors, thought the capable blind student could learn something from handling and feeling the weight of various formation specimen. One enterprising student used twelve inch by fifteen inch drawing paper and pasted twine to form botany representations for his notebook.

Difficult Courses

When asked to give the courses in order of difficulty because of lack of sight, science, math, and English were given. However, in giving the courses in order of least difficulty due to lack of sight, English, history, and sociology were given. It was determined that freshmen felt English required more study of structure and accurate expression of thought and less volume of reading and writing.

Library Usage

A study of this area of academic performance indicated little problem with the mechanics of obtaining books or limitations on the use of books on reserve. Four percent of the experimental and ten percent of the control students reported some problem in getting reserve books. No explanation was found for the experimental students having more difficulty as a group. The problem was evidently insufficient to cause professors to modify reading assignments, according to the students. While professors had no systematic method of checking on the completeness with which reading assignments were done, they reported that the assignments were completed to their satisfaction.

Methods and Problems of Campus Mobility

In college, mobility or the ability to travel on the campus assumes importance to the academic performance of the student, as well as in his social activities and independent living in dormitories. Instructors observed that twelve percent of the experimental and seven percent of the control students had some difficulty in locating the classroom. Instructors reports indicated twenty-five percent of the experimental and nineteen percent of the control students had tardy and absent records. The instructors' reports of tardiness and absences very closely coincided with the reports given by students about campus travel. Twenty-nine percent of the experimental and twenty percent of the control students reported difficulties with campus travel. Three methods of travel aids were used: cane, guide, and dog. Fifty-one percent of the experimental students used the cane, forty percent used no aid, and ten percent used guides. Sixty-seven percent of the control students used no aid, sixteen percent used guides, and fourteen percent used the cane, and two percent used the dog.

Social Performance and Adjustment

Instructors seemed well informed about the students' participation in extracurricular activities but knew little about their social activities. For some reason they felt that a greater ratio of experimental students participated in extracurricular activities. From the numbers reported by them twenty-two percent of the experimental and ten percent of the control students participated. The reports of the academic advisors and dormitory supervisors closely coincided with the instructors' reports. However, the report of students indicated forty-three percent of the experimental and thirty-nine percent of the control students participated in extracurricular activities.

To determine something of the social adjustment, inquiries were made of the instructors, academic advisors, dormitory supervisors, and the students. Instructors estimated their social adjustment to be about average but could not be specific. Advisors rated them from fair to superior with approximately twelve percent of each group rating below average. Dormitory supervisors reported that forty-one percent of the experimental and thirty-one percent of the control students dated. Inquiries made of the students indicated that fifty-nine percent of both groups dated. Twice a week was the most common interval of dating, with once weekly, irregular, and once a month the order given of frequency by both the experimental and control students.

The reasons given by the experimental students for not dating ranked in order: steady back home, few occasions for dating, too busy, not interested now, enough school activities, dates back home, and dates are hard to get. With the control students the order of reasons were: not interested now, dates hard to get, have a steady at home, enough school activities, too busy, and too young yet. Forty-one percent of the experimental and thirty-one percent of the control students felt that blindness affected their relationships with other students. When asked to elaborate, the order of reasons given by experimental students were: sighted students are shy, sighted students are overprotective, blind students are limited in "ice breaking" opportunities, feel limited in social skills, boys feel conspicuous with a blind girl, can't enter activities of the campus as easily, sighted students are prejudiced toward the blind and fraternities reject the blind. Negative reasons given by control students ranked in order: sighted students are shy, lack of social skills, can't break into small groups, sighted students are overprotective, and blind are limited in "ice breaking" opportunities.

Experience of College Personnel with Blind Students

This study was concerned with the current and previous experience of college personnel with blind students. Schools for the blind, both private and public, have long been operated on the elementary and secondary level with the majority of blind students in these levels of education attending them. During the past decade an increasing number of blind students at the secondary level have enrolled in the regular public high school. The number of blind students (2,000) now enrolled in college constitutes a minority group if special methods of teaching and facility accommodations must be used for their education.

Inquiry was made regarding the number of blind students currently enrolled in the cooperating colleges and to what extent the personnel involved had previous experience with blind students. These inquiries were directed to the deans, the dormitory supervisors, the academic advisors, and the instructors. In reply to the question, "Are there other blind students on the campus now?" fifty-three (60%) of the deans answered in the affirmative, thirty-one (35%) in the negative, and four (5% approximately) did not know. The deans had knowledge of twenty-five other blind freshmen, six sophomores, thirteen juniors, five seniors, and four graduate students enrolled in their colleges in addition to the students with this study. During the previous five years, seventy-six percent of the deans had experience with an estimated total of 155 blind students. Their experience ranged from one to twelve students. Of the dormitory supervisors, sixteen (20%) knew of sixteen other blind students above the freshman level on the campus or in their dormitories, but forty-four (80%) knew of no others. During the previous five years thirteen supervisors had worked with from one to ten blind students. Of the eighty-three academic advisors, thirty-five knew of other blind students on the campus. Thirty-six (42%)

had previous experience with blind students. One had worked with twenty other blind students and two had worked with ten. Only 28% of the instructors had previous experience in working with blind students. These instructors were aware of other blind students being on the campus. While the blind students were a numerical minority in all the cooperating colleges, their presence on the campus was known and observed by all levels of college personnel.

Instructors at the freshman level had the least experience with blind students. This fact adds emphasis to the students' responsibility for taking the initiative in making known his needs and being able to suggest adaptations.

Faculty Acceptance of the Blind Student

The foregoing data indicated the majority of college personnel were unacquainted with blind persons in a college student relationship. The study was concerned with the possibilities of prejudice and the extent of such feeling in college personnel and surveyed this factor. Inquiry was directed to all faculty personnel and students interviewed. The question to college personnel was, "Do you feel there is any faculty prejudice toward blind students?" Nine percent of the deans said "yes," five percent of the academic advisors said "yes," four percent of the instructors said "yes," and only two percent of the dormitory supervisors said "yes." Students were asked, "Do you feel that any of your professors have prejudice toward blind students?" Four percent of the experimental students and two percent of the control students answered in the affirmative. The examples given by students to justify their replies were:

A. "Professor failed to provide examinations in Braille copy."
B. "Grapevine - reports that the blind want special privileges."
C. "Professor suggested change to another course."

Anticipation and Occurrence of Problems

An additional survey was made to try to determine the extent to which college personnel who had no previous experience anticipated problems with blind students. An inquiry was directed to them in the question, "What problems did you anticipate when you learned a blind student was enrolling?" Eleven deans who had experimental students and six who had control students anticipated twelve common problems. The problems most mentioned were concerned with:

1. campus travel and safety
2. punctuality at classes
3. how reading could be done
4. how science-math requirements could be met
5. how examinations could be administered fairly both to the student and the standards of the college

The leading problems that occurred were:

1. science-math-laboratory areas
2. obtaining reader services
3. taking examinations

The majority of academic advisors, ten to one, set up no anticipated problems. The ones who anticipated problems were concerned about:

1. the required volume of reading
2. travel on campus
3. blackboard work
4. taking tests in a valid manner
5. taking laboratory courses and math
6. meeting required courses of study
7. roommate assignments
8. taking notes in class and using notebooks
9. student expecting favoritism
10. depending on other students

When asked which of these problems did occur, nine-two percent said "none," eight percent said "all of them at various times." The problems specifically mentioned ranked in order were:

1. reader service problems
2. instructional methods
3. note-taking
4. taking examinations
5. punctuality

Dormitory supervisors who had no previous experience with blind students were almost equally divided in anticipation and no-anticipation of problems. The problems anticipated in order of frequent mention were:

1. how roommate assignments would work out
2. how recording equipment could be used without disturbing roommate
3. safety in using stairs and travel on campus
4. feared isolation by other students
5. feared dependency and demanding attitude
6. which floor of dormitory to be used

The problems that arose were limited to roommate compatibility, the use of special equipment, and personal hygiene.

Instructors as a group seemed to wait out their problems rather than name them in anticipation. Fifty-two percent of the instructors preferred to wait for a conference with the student when they knew in advance they would have a blind student in class. Forty-eight percent of the instructors anticipated the following common problems in order of frequency:

1. taking examinations
2. reading assignments
3. note-taking
4. blackboard and visual aid use
5. inadequate methods for instructing blind
6. theme and other written assignments
7. traveling to class and punctuality
8. laboratory work
9. irregular attendance in class
10. questionable ability for doing college work

No significant difference was found between the concerns of English professors and other professors. The problems that occurred in order of frequency were:

1. theme and other writing assignments
2. use of course prepared notebooks
3. doing the volume of reading required
4. obtaining information from blackboards
5. taking examinations

Instructors and others who said they made no anticipation of problems seemed to hold an open mind rather than identify problems in advance. Practically all felt there would be problems because all students face various problems but they preferred to let the blind student identify his own problems and then cooperate with him in working them out. Those who did anticipate problems, in many instances said fewer occurred than they anticipated.

Comparison With Other Handicapped Students

The on-campus follow-up attempted to learn how college personnel compared the problems presented by blind students with those of students having other handicaps. This inquiry was directed to each person representing the various levels of college organization by asking the question, "Do you feel that blind students present more, the same, or fewer problems than your students with other handicaps?" Quite a percentage of personnel in other levels than the administrative felt they could not compare. They insisted that the problems were different and not comparable. Those who were willing to compare also held the same reservations but stated their impressions as shown in Table 19.

Table 19 Comparison of Problems Presented by Blind Students and Other Handicapped Students as Seen by Different College Personnel
Code: NC=No Comparison

College Personnel	Experimental				Control			
	More	Same	Less	NC	More	Same	Less	NC
Deans	37%	58%	5%	0%	39%	46%	15%	0%
Advisors	29%	33%	19%	19%	17%	35%	17%	31%
Dormitory Supvs.	15%	41%	17%	22%	23%	39%	19%	19%
English Prof.	27%	17%	20%	41%	14%	44%	1%	39%
Other Prof.	16%	38%	19%	27%	18%	38%	20%	24%

The over-all comparison to some extent supports the appraisals of open-mindedness of college personnel as reflected in the estimates of prejudice and the anticipation of problems. The comparisons made by English instructors as reflected in Table 19 may be significant for prospective college students, their high school teachers, and their counselors. It may be a significant indication of the difficulty encountered in this course because of blindness or visual loss. In considering the problems presented by the experimental students, twenty percent of the English professors felt that the blind presented less problems, and for the control sample, only one percent of them felt the blind student presented less than other handicapped students. The English professors also found it more difficult to compare. The reason for the differences are not known. A presumption is only ventured. Possibly the experimental sample, which had approximately twice as many totally blind, worked out adaptations; whereas, the control sample, which had twice as many partials, may have relied upon either no adaptations or inadequate adaptations. The wide use of workbooks and theme writing in class has placed college English very much on a laboratory pattern of teaching and freshmen cannot choose to eliminate English

The survey of the possibilities of prejudice, the problems anticipated by personnel with no previous experience with the blind, and the comparison of the problems presented by blind students and those presented by other handicapped students indicate a readiness of college personnel to accept the challenge of teaching the blind.

CHAPTER VII

RESULTS: COMPARISONS OF EXPERIMENTAL AND CONTROL SAMPLE PERFORMANCE

Introduction to the Findings

The findings of the project lend themselves to several areas of comparison between the experimental and control groups. They also offer constructive help in areas of education guidance and performance that cannot be shown by comparison of the two groups. An analysis of the data indicates the areas of importance to be:

1. the effect of the course on the screening of the experimental population and their admission to college
2. indications of staff evaluations for extended guidance for questionable college candidates who entered college
3. comparison of the continuance in college of the experimental and control groups
4. summary of achievement of students in non-accredited college
5. comparison of achievement between the experimental and control groups as indicated by grades in accredited colleges
6. comparison of achievement in schools of varying sizes
7. comparison of achievement in public and private institutions of higher learning
8. comparison of achievement of students in each group with educational backgrounds of residential and public or private schools
9. comparison of achievement between students with varying levels of sight for both experimental and control groups
10. comparison of changes in college courses between the experimental and control groups
11. major areas of academic study chosen by experimental and control groups
12. results of campus follow-up study, impressions of
    a. administrative levels
    b. instructional levels
    c. guidance levels
    d. supervisory levels
    e. student levels

Results of Guidance Anticipated

As a working hypothesis one of the results hoped to be obtained from both the demonstration and research aspects of the project was that of guidance. It was hoped that both the student and the rehabilitation counselor might obtain evaluations indicating the aptness of a college candidate. The five factors mentioned in the purpose of the project are repeated here for the convenience of the reader:

1. measure the blind individual's ability to participate successfully in a college program
2. acquaint him with the problems that may be anticipated for most college students with emphasis on problems that may be compounded by blindness
3. provide him with specific and detailed information as how to meet and solve these problems
4. assist him in his emotional adjustment to a new environment
5. assist the vocational rehabilitation counselors to evaluate the ability of blind individuals to become satisfactory college students

Two of the five stated purposes, the first and the fifth, were designed to be of guidance value. They indicated a definite need for selection or screening of college candidates. The fifth also implied that such screening assistance might be desired by vocational rehabilitation counselors. Administrators of rehabilitation agencies and college officials who served in an advisory capacity to the project felt that the demonstration of screening and guidance value could be one of the most important results of the program.

The other three statements of purpose set up factors of performance which were considered by the staff in making an evaluation. The student's performance in regard to these purposes gave the staff a wide range of criteria for making an evaluation. Standardized measurements, academic performance, and behavior in the group gave certain indications which the staff synthesized into an evaluation. These findings were embodied in the final report and recommendation to the rehabilitation counselor for his consideration and future planning.

Categories of Evaluations and Recommendations

Recommendations fell into three categories: positive, qualified positive, and negative. Performances that left no doubt in the staff of the candidate's ability to do college work were given as positive even though different levels of performance were expected. Levels of anticipated performance were stated as: below average, average, above average, superior or excellent. When student performance indicated specific areas of weakness that might be overcome, a qualified positive recommendation was made, stating the area of weakness. When performance was sufficiently doubtful, a negative recommendation was made. Rehabilitation counselors received the evaluation and recommendations in a final written report, but the student received them from the facility counselors as a counseling and guidance service. Both the vocational rehabilitation counselor and the student had essentially the same information from which to make a decision. The effect of the evaluation report and its interpretation upon the final decision about college admission cannot be given in absolute terms but may have been a factor in determining the number of the experimental population which did not enroll in college. Consequently, counseling for those who were enrolled in the course but did not enter college is one of the results of the project that should be reported.

Effect of Staff Evaluation on College Enrollment of Experimental Sample

Although all guidance processes are believed to be of definite value, it is difficult to prove such value. No feedback or follow-up on the persons who took the course at the facility but did not enroll in college was planned in the research design. These persons who did not enter college are not included in the final research sample but were evaluated for college potential and counseled accordingly. Candor requires an exposition of the evaluations of the experimental sample that did not enter college, as well as for the ones that did, even though the definite effect of the evaluation on their decision not to enroll cannot be determined in all instances.

Evaluations of Students Not Entering College

Twelve persons who were otherwise eligible for the research sample did not enter college. All twelve were evaluated to be poor or questionable college candidates at that time. Evaluations and recommendations were made on the basis of six negative indications for college performance, as shown on the following table:

Table 20 Staff Evaluation of Students Who Did Not Enroll in College

Key to Table

TR=Type of Recommendation:
N=Negative
QP=Qualified Positive
LA=Low Ability
PI=Physical Inability
EI=Emotional Instability
SI=Social Immaturity
LAP=Low Academic Performance
WM=Weak Motivation

TR	LA	PI	EI	SI	LAP	WM
N		X	X		X	
N				X	X	
N	X				X	X
N	X	X	X	X	X	
N				X	X	X
N					X	X
N	X	X	X	X	X	X
N	X	X		X	X	X
QP		X	X		X	
QP					X	X
QP					X	X
QP			X	X	X	X

The negative factors used in the foregoing table require some interpretation, both as to definition and methods of determination. Low ability refers to the intellectual capacity as determined by standardized measurements such as, the WAIS or college entrance tests, and was usually confirmed by one or more other deficiencies in performance, especially in the academic area. Physical inability refers to the effect one's physical state had upon punctuality and regularity in training and was determined by both medical examination and personal complaint. Emotional instability refers to a non-organic condition indicated by standardized tests and staff observations. Social immaturity refers to the irresponsible and inappropriate behavior not attributed to medical findings. Low academic performance refers to the low level of academic performance as measured in the facility's academic instruction area--English. Weak motivation refers to the verbal and performance indications of interest in college attendance.

The table indicates the subjective aspects of a staff evaluation, but this is one of the advantages of such an evaluation as the result of such a course. While no formal follow-up was planned or has been made on these students who did not enter college, what information that has been obtained from reliable informal sources has given some help on results. Of the four qualified positive recommendations, two married soon afterwards and changed vocational objectives, one entered a sheltered academic employment situation free of stressful competition, and the fourth entered business college. Lack of motivation and low academic performance were common negative factors in three of the cases. In one of these cases motivation, social maturity, and intellectual ability were positive, but the degree of physical and emotional instability resulted in such low academic achievement that a recommendation for college admission was conditional. Improvement in the physical and emotional states were felt to be essential for successful college. This did not occur and the subject accepted suitable sheltered employment instead of college enrollment.

Of the eight negative recommendations, informal information indicates one entered a trade school immediately after the course, one continued personal adjustment training for an additional two months and entered trade school against his wishes only to drop out in less than two months, one enrolled for the first time in a school for the blind to reinforce the previous public school education and is yet in the rehabilitation process of vocational training; two reportedly entered training for piano tuning, and one of these entered college two years later, two entered irregular employment, and one has had repeated hospitalization and treatment for emotional disorders.

Low academic achievement was a common negative factor for all, lack of motivation a common factor for seven, with social immaturity and emotional instability a common factor for five, physical instability a common factor for four, and low intellectual ability a common factor for only three.

A formal study of the subsequent educational effort and vocational rehabilitation adjustment of these twelve who did not enter college might offer substantial guidance for workers serving the blind.

Evaluations of Students Who Entered College

The facility staff did not see all of the fifty-three students in the experimental sample who entered college to be good college material. Of the fifty-three, thirty-eight (72%) were given positive recommendation for college potential and fifteen (28%) were given questionable-positive and negative recommendations. Table 21 gives the evaluation and type of recommendation made by the staff to the rehabilitation counselor regarding those students. It also gives their subsequent performance in college.

Table 21 Evaluation and Subsequent Performance of Questionable Experimental Sample

Key to Table:

TR=Type of Recommendation's
  QP=Qualified positive
  N=Negative
LA=Low Ability
PI=Physical Instability
EI=Emotional Instability
SI=Social Immaturity
LAP=Low Academic Performance
LM=Low Motivation
FYR=First Year's Record
SEY=Status End of Year
  D=Dismissed
  W=Withdrew
  SS=Special Student
  GS=Good Standing

TR	LA	PI	EI	SI	LAP	LM	FYR	SEY
N				X	X	X	18 hr. 1.0	D
N	X	X	X	X	X		12 hr. 1.2	SS
N			X	X	X	X	6 hr. 1.5	W
N			X	X	X	X	15 hrs. 2.5	SS
N		X	X	X	X	X	18 hrs. 1.24	GS
N			X	X	X		18 hrs. 2.6	GS
QP				X	X	X	18 hrs. 2.4	W
QP	X	X		X	X		11 hrs. 0.66	W
QP			X		X	X	26 hrs. 1.29	GS
QP			X		X	X	27 hrs. 1.35	GS
QP		X		X	X	X	24 hrs. 2.00	GS
QP					X	X	34 hrs. 2.1	GS
QP				X	X	X	24 hrs. 2.13	GS
QP	X				X		33 hrs. 2.54	GS
QP				X	X		24 hrs. 3.29	GS

NOTE: All hours are converted to semester hours and grade points to a 4.0 scale. A=4, B=3, C=2, D=1, F=0.

Table 21 shows that of the six negative evaluations, two (33%) were experiencing difficulties to such an extent that one had to withdraw and one had been dismissed for one semester before being permitted to re-enroll because of scholastic deficiency. Two (33%) were special students taking limited courses but doing a satisfactory quality of work. Two (33%) were in good standing but facing narrow margins of quality work on limited courses. The one who was dismissed completed 18 hours from a 30-hour course and made a grade point of 1.0. The one who withdrew completed 6 hours and made a grade point of 1.5. The two special students completed 12 and 15 hours from a total enrollment of 21 hours with grade points of 1.2 and 2.5 respectively. One of the two in good standing had completed 18 out of an enrollment of 24, and the other, after one semester of additional preparation, completed 18 hours with grade points of 2.4 and 2.6, respectively. The six negative students completed an average of 14.5 semester hours with a grade point average of 1.67.

Qualified-positive recommendations presented a better picture of achievement. Of the nine, only two (22%) had withdrawn at the end of the year and seven (78%) were in good standing. The two who withdrew completed courses of 18 hours and 11 hours, with grade point averages of 2.4 and 0.66, respectively. The seven who remained in good standing completed courses ranging from 24 hours to 34, with grade points ranging from 1.29 to 3.29 with a grade point average (gpa) of 1.97.

Of the fifty-three who entered college, there were thirty-eight (38) positive evaluations for college performance. Of these thirty-eight, one (3%) was on probation at the end of the freshman year. Two others had voluntarily withdrawn but were meeting the standards of the school. The two who had withdrawn and the thirty-five remaining had enrolled in course loads ranging from 24 to 34 semester hours and completed course loads ranging from 13 to 34 hours with a grade point average of 2.86. The one who was on probation at the end of the first semester enrolled in 17 hours and completed seven with a grade point average of 2.83, but this represented scholastic deficiency by the standards of this college.

A summation of the evaluations made by the staff for the entire experimental sample may be graphically seen in Table 22 with relations to the end of the year status.

Table 22 Staff Evaluations and End of Year Status of the Experimental Sample

Type of Evaluation	No. of Each	Status at End of Year			
		Probation	Withdrew	Spec. Student	Good Standing
N	6	1	1	2	2
QP	9	0	2	0	7
P	38	1	2	0	35

Case Studies of Evaluations and Recommendations

Two case studies suggest factors that could be very important in guidance: one from the qualified-positive recommendations and one from the positive. The subject of the qualified-positive recommendation had a very poor educational background in two types of schools. Considerable time was spent in a residential school for the blind with an eventual attainment of the 4th grade. Later, transferring to a private high school, graduation was attained at the age of 29. The rehabilitation counselor held grave doubts regarding college potential and these same doubts were entertained by the staff in making their evaluation.

The negative indications were low ability and low academic achievements. Low ability was determined by standardized tests and low academic achievement was determined by performance in the college preparation course. The positive indications in the evaluations were motivation, strong physical ability, emotional stability, and relatively strong social maturity. These positive factors led the staff to make a positive recommendation for college candidacy with the cautioning qualification that a college of a special kind be found to provide personalized attention. This student with the help of the rehabilitation counselor arranged admission in such a college, one of the smallest in size with a specialized curriculum and adequate volunteer staff for personal assistance. This student completed the freshman year with 33 semester hours of credit and a grade point of 2.54. This represents personal fulfillment on the educational level. The fulfillment in the vocational field is yet to be evaluated for this person whose success in college was thought to depend so much on guidance in selecting a suitable college.

The other case of special study with regard to staff evaluations is one about which the staff held no reservations. A review of the case record of this student indicates the staff overlooked specific negative indications as shown by standardized measurements and also in personal performance. The case study further revealed that this student was slow in adjusting to the facility during the course and began to do his best quality of work late in the course. His first ratings were below average, but his final ratings were superior. A slow start in the facility setting was not disastrous, but it was in the highly competitive college setting he entered. The student had chosen a science-math major and selected a university with a reputation for high standards in this field. The campus follow-up revealed that the college staff was not impressed by the student's effort. The college staff regarded visual limitation as a handicap that should have alerted the student to put forth a maximum effort, which they felt was lacking. The greater handicap, however, was the negative indication pinpointed by the standardized measurements which the facility staff overlooked in making its evaluation. The Scholastic Aptitude Test gave this student a score of 20 points below the mean score of the visually handicapped population in the science-math field and a ranking at the 40th percentile level; whereas, the mean score of students in this field at this university was 177 points above the mean score of the visually handicapped with a ranking in the 90th percentile of the general population. Had this factor of competition been observed by this student and the facility staff, and perhaps even better, by counselors in the secondary school, it might have saved one semester's work and prevented a probationary period of an additional semester with whatever handicap it might have been. The Kuder Vocational Preference Record also gave negative indications.

This case study and the one previously mentioned emphasize the relevance of college selection to successful college performance.

Comparison Between the Experimental and Control Samples' Continuance in College

Continuance in college to graduation is an ideal being emphasized by all college admission offices, rehabilitation counselors, and most parents. This project proposed to compare the number of experimental and control sample members remaining in college at the end of the first year.

The course given by the facility attempted to emphasize the implication of this intent of college admission and to evaluate motivation for it. It was felt also that the simulated experience in the course might serve as a self-examination which would assist college candidates to evaluate their goals more realistically and prevent or reduce false starts.

Fifty-three students in the experimental and forty-nine in the control samples entered college. At the end of the freshman year forty-six (86.8%) of the experimental sample and forty-one (83.6%) of the control sample were continuing in college. The difference between the two samples is of questionable significance, but this retention rate is much higher for the blind students than for the general freshman population studied by others. In a study of over 13,000 freshmen, the retention rate for the institution of original registration was 58.1.[23] When transfers to other colleges were taken into account, the retention rate rose to 64.2%. For the blind students, however, there was only one transfer made during the freshman year, which is taken into account in the retention rate given. The transfer was made by one of the control sample without loss of credit or time in college.

The reasons for discontinuance as revealed by the end of the year status in the two samples may be important. In the experimental sample of seven students who discontinued during or at the end of the freshman year, five withdrew and two were dismissed for scholastic deficiency. In the control sample, of the eight who discontinued seven were failing to meet the scholastic standards of the institution and one failed to re-enter after the first semester although the student was meeting scholastic requirements.

A review of the course loads each sample attempted and completed also has raised questions not clearly answered. The experimental sample enrolled in a total of 153.5 semester hours and completed 102.5 hours of credit (66%) of the original course enrollment. Course loads ranged from 13 semester hours to 32 for the year with an average course load of 19.2 semester hours. Work completed ranged from 6 to 18 semester hours with a completed course average of 12.8 semester hours with a grade point average of 1.84. The control sample which dropped out were enrolled in a total of 163 semester hours and completed 113 hours of credit (69.3%) of the enrolled course load. Enrolled course loads for these dropouts ranged from 13 to 31 semester hours with an average course load of 20 semester hours. The completed course load ranged from 0 to 25 with a completed course load average of 14.1 semester hours with a grade point average of 1.09.

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[23] "In and Out of College," op. cit. p. 10, 79, and 87.

A larger number of the experimental sample withdrew than in the control sample; whereas, a larger number in the control sample discontinued because of scholastic deficiency. Information in this area is incomplete since the follow-up was limited to the first year. Some who dropped out in the first year of the project may hav re-entered.

An area of further study is needed to determine why more of the experimental sample withdrew and why a larger number of the control sample discontinued because of scholastic deficiency. From the case studies and college records, three possible conjectures occur. Only one of the experimental sample that withdrew was attempting to do 100% of his own reading; whereas, five of the control sample were attempting to do 100% of their reading. Of the remaining five in the experimental sample that withdrew, three were, totally blind, and used readers and recording for 100% of their reading while the other two used readers for 95% of their reading. The two in the control sample who discontinued because of scholastic deficiency were high partials who expressed rejection of special aids and methods for the blind during on-campus interviews. Consequently, it might be assumed that the experimental sample could better accept and use special methods for the blind than the control sample and that the experimental student could more realistically appraise his performance and voluntarily revise his objective better than the control student.

The third conjecture comes from the college records indicating that two in the experimental sample enrolled as special students--one as a non-degree candidate and the other for a limited enrollment classification--while none of the control sample enrolled in such special classifications.

These are conjectures only and more specific and extended study would be necessary to accurately determine causes.

Table 23 shows the number of students in each status at the end of the year for both samples. The number of special students and students in good standing gives the total of each sample who were in continued status.

Table 23 End of Year Status of Both Samples
Code: Exp.=Experimental Contr.=Control %=Percent of Group

Status	Exp.	%	Contr.	%
Probation	2	3.59	7	14.28
Withdrew	5	9.43	1	2.04
Special Student	2	3.59	0	0
Good Standing	44	83.39	41	83.68
TOTALS	53	100.00	49	100.00

No formal follow-up has been done to determine the number of students in probation and withdrawn status who may have re-enrolled since their freshman year. Informal but reliable information concerning the experimental group indicates that the two on probation and one in the withdrawn status were planning to re-enter. One of the special students who discontinued has resumed personal adjustment and prevocational training. It is highly probable that some of the control students on probation and withdrawn status may have re-entered or may plan to do so. The rate of continuance, 86.8% for the experimental and 83.6% for the control, when compared to studies of the general freshman population of 64.2% indicates considerable screening in the selection of blind college students. Consequently, society is experiencing a much better ratio of college graduates to freshmen admission with blind students than with the general freshman admissions if this rate of continuance remains constant.

Summary of Achievement of Students in Non-Accredited Colleges

Of the 102 students in both samples, four were enrolled in four different colleges having no affiliation with the six regional accrediting associations at that time. Three were private and one public-controlled colleges. Two of the private colleges had an enrollment of 200 and one an enrollment of 600. The public school had an emrollment of 1,700. Three of the students were in the control sample and one in the experimental.

The three students of the control sample were partially sighted: two were graduates of residential schools for the blind and one was a public school graduate. The experimental sample student was totally blind and had an educational background of both residential school for the blind and a special private high school.

Of the three control samples in these colleges, two partially sighted ones used ink print and did all their own reading, the other partially sighted one used disc and tape recordings for 90 percent and readers for the other 10 percent of reading. The experimental sample, who was totally blind, used disc and tape recordings for 80 percent and Braille for 20 percent of reading. The two partials who used ink print exclusively and did their own reading enrolled in 25 and 29 semester hours and completed 25 and 26 hours of work, respectively, each making an average grade point of 2.2. The one partial who used recordings for 90 percent and readers for 10 percent of reading enrolled in 32 and completed 32 semester hours with a grade point of 2.4. The totally blind student of the experimental sample enrolled in 33 and completed 33 semester hours with a grade point of 2.5. This student used recordings for 80 percent and Braille for 20 percent reading.

All these students ranked from low average to average ability, according to test results. Follow-up campus studies confirmed the rehabilitation counselor's case report indicating that the two partially sighted who did their own reading of ink print and made the lowest grade point had rejected all adaptations and methods used by blind students.

Case studies indicate that the two students, one totally and the other partially blind, who used recording, Braille, and render services had been conditioned to use all possible aids when they entered college. The totally blind student, a member of the experimental sample, had been evaluated by the facility staff to be a doubtful college risk unless a college of a very special kind could be found. This student and the one of the control sample who used recordings and reader services were both enrolled in colleges having a specialized curriculum and an adequate source of auxiliary or volunteer service. For whatever it means, they both completed a minimum of 7 hours more work and made a grade point average of 0.2 and 0.3 higher than the two who rejected adaptations of methods.

There may be other factors such as motivation and social and personal immaturity involved in these differences of performance. However, from what is known it appears that the use of adaptations may have accounted for the better achievement of two of the four enrolled in non-accredited colleges.

Comparison of Achievement Between the Experimental and Control Samples as Indicated by Grades in Accredited Colleges

The project proposed, as one measure of evaluation of the course, to compare grade levels made in accredited colleges by the two samples. An accredited college, as used in this study, refers to membership of a college in one of the six regional accrediting agencies for higher education as listed in the Education Directory 1965-66 of the Office of Education.

Sixty-six of the seventy colleges involved in this project held membership in one of the six accrediting agencies. Fifty-two (98%) of the experimental sample and forty-six (94%) of the control sample were enrolled in accredited colleges. The experimental sample was enrolled in colleges holding membership in four of the six accrediting agencies and the control sample was enrolled in colleges belonging to only two of the four However, forty-nine (94%) of the experimental sample were also enrolled in the colleges which belonged to these two accrediting agencies. Since the same ratio of each group were enrolled in colleges belonging to the same accrediting agencies, group comparisons of achievement by grade levels was limited to the enrollment in these colleges. The Southern Association of Colleges and Schools and the North Central Association of Colleges and Secondary Schools were the accrediting agencies for the sixty-three colleges in which ninety-four percent of each sample was enrolled. Table 24 shows the number of students in each sample enrolled, the number of hours completed, the percent of enrolled hours completed, and the grade point averages earned.

Table 24 Comparisons of Performance in Colleges of Two Accrediting Agencies
Code: Hrs. Enr.=Hours Enrolled Hrs. Cpl.=Hours Completed
GPA=Grade Point Average

Accrediting Agency	Experimental					Control				
	No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA	No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA
North Central	28	27.10	26.02	96%	2.73	18	26.00	23.00	88%	2.41
Southern	21	26.95	23.24	86%	2.41	28	28.00	25.00	89%	2.63

Comparisons can be readily seen by referring to Table 24. In the North Central colleges, the experimental students enrolled in 1.10 more semester hours, completed 3.02 more semester hours, and earned 0.32 higher grade point average than the control students did in these colleges. The performance of each sample was very nearly reversed in the colleges belonging to the Southern Association. In these colleges control students enrolled in 1.05 more semester hours, completed 1.76 more semester hours and earned a 0.22 higher grade point average than the experimental sample did in these colleges. The reason is not known.

The differences between the two samples are even less striking when the combined work in the two associations were averaged as shown in Table 25.

Table 25 Combined Averages of Work in Accredited Colleges

Accrediting Agencies:	Experimental					Control				
	No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA	No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA
North Central & Southern	49	27.00	25.00	92%	2.59	46	27.00	24.00	89%	2.54

On a four-point grade point system each sample would average C+ or B- letter grades, which if maintained, would meet the grade level requirements in most, if not all, liberal arts colleges in these accrediting associations.

Rate of Completion Projected

The rate of completion of work may give an indication of the time required for graduation. While some colleges require more for graduation, the predominant requirement in four-year colleges is 124 semester hours. To graduate, at the average rate of work completed in the freshman year in these North Central colleges, the experimental students would need 8.8 semesters and, at the rate of completion shown by the control sample, 10.3 semesters would be required. The average rate of completion by the experimental sample in Southern Association colleges would require 10.3 semesters but for the control samples in these colleges only 8.9 semesters would be required. Projecting on the combined completion rate of 25 semester hours for the experimental sample and 24 semester hours for the control sample, 9.9 semesters would be required for the experimental sample, and 10.2 semesters for the control sample to earn 124 semester hours.

Standard Deviation of Performance in Accredited Colleges

It should be observed that this projection is based on the average performance of the two freshmen samples in the accredited colleges. The standard deviation in grade points for the two samples was found to be 1.35 for the experimental and 1.34 for the control sample. The distribution of performance on this basis of comparison is shown in Table 26.

Table 26 Standard Deviation in Grade Points of Performance in Accredited Colleges

Experimental: M=2.57 grade point Std. Deviation 1.35				Control: M=2.52 grade point Std. Deviation 1.34			
3 cases 6% -2σ	23 cases 47% -1σ	23 cases 47% +1σ	0 cases 0% +2σ	4 cases 9% -2σ	18 cases 39% -1σ	24 cases 52% +1σ	0 cases 0% +2σ

Comparison of Table 26 with Table 13, pages 64 and 29, in which ability distribution is shown gives an indication of the competition in colleges faced by both samples.

On the basis of normal requirements for completing college in four years, one must complete an average of 31 semester hours each year. An individual analysis of the freshman year performance of both samples revealed there were no straight "A" students in either sample. Individual analysis further indicated that 14% of the experimental sample and 15% of the control sample had completed 31 semester hours at a grade level of "B" to "A-" (GPA 3.00-3.90) which, if continued, would achieve graduation in four years.

On the basis of completing college in four years with an average of "C", it was found that eight percent of the experimental and thirteen percent of the control sample had indicated such achievement in their freshman year.

On the single basis of achieving a grade level of "B" in their freshman year, it was found that fourteen percent of the experimental had made this grade and completed courses ranging from twenty-six to thirty semester hours with an average completed course load of twenty-seven semester hours. On the same basis, twenty percent of the control sample made this achievement with course loads ranging from eighteen to thirty semester hours with an average of twenty-seven semester hours completed.

From the grade level comparisons, it cannot be stated what the course did to enable the experimental sample to be better prepared than they would have been without the course. Table 26, indicated that a smaller percent of the experimental sample was in the minus two sigma distribution. It may be presumed that the weaker students in the experimental sample were enabled by the course to achieve closer to the average than they would have without it and conversely that without additional preparation the weaker students in the control sample were unable to make such an achievement.

Achievement of Blind Students in Colleges of Varying Size

Questions from parents, students, educators, and publishers indicate a widespread interest in the choice of a college for blind students on the merits of the size of the college enrollment. The Distribution of the two samples afforded a basis for this comparison in three sizes of enrollment: Size 1, colleges with 1,000 or less; Size 2, colleges with 1,100 to 2,000; and Size 3, colleges with 2,100 up. Table 27 shows the numbers of colleges in each size, number of students enrolled, average enrolled hours, and average hours completed to the nearest fractional hour and the grade point average.

Table 27 Enrollment and Performance in Colleges Varying Sizes

Size	No. of Schools	No. of Students	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA
1	17	18	27	26	96%	2.86
2	14	18	25	22	89%	2.59
3	39	66	28	27	96%	2.69

From Table 27, it is seen that students completed the same percent of their enrolled courses in Sizes 1 and 3, although they enrolled in one hour less and also completed one hour less. Students in both Sizes 1 and 3 colleges made a higher grade point average than in the Size 2 colleges. An individual analysis of the work indicated the difference in the amount of work enrolled and completed and quality of work done in the Size 2 colleges to be due more to student differences and preferences than to the size of the college. From the data it would appear that the size of the college is a minor factor so far as achievement for the blind student is concerned.

Comparison of Achievement in Public and Private Institutions of Higher Learning

Interest was expressed by members of the Advisory Committee, and also by parents and students, about the advantages and disadvantages for the blind students in public and private institutions of higher learning. This study can deal only with the achievement of blind students as reflected by the amount and quality of work completed. It was found that there were twenty-seven students enrolled in twenty-five private institutions of higher learning. They enrolled in an average course load of twenty-eight semester hours (97% of the enrolled course) with a grade point average of 2.53.

Seventy-five students were enrolled in forty-five public institutions of higher learning. They were enrolled in course loads averaging twenty-seven semester hours, completed twenty-five semester hours (90% of the enrolled course), and earned a grade point average of 2.74. The quality of work was slightly higher in the public institutions of higher learning (by 0.21 of a grade point), but the letter grade level would be unchanged. The major advantage was in the amount of work completed. According to the rate of completion, the student would need 9.6 semesters in private and ten semesters in public institutions of higher learning to complete 124 semester hours.

This apparent difference may be less than it appears in the comparison. Many students and a number of college personnel felt that, in general, all freshmen would be well advised to enroll in less hours the first year. However, it may be difficult to make up a loss of six hours, but the fact that colleges recognize minimum and maximum courses and permit such variations indicates that such enrollments are justifiable. Summer terms are frequently used to maintain a schedule of completion in four years. The alternatives of graduating in four years (8 semesters) with a lower quality or taking more time for graduation and doing a higher quality of work are possible choices for those students having the ability to do a higher quality of work. These choices are suggested from the data whether the college is public or private, large, medium, or small in size.

Comparison of Achievement Between the Two Samples Having Residential, Public, and Private School Backgrounds

Considerable interest has been expressed by educators, rehabilitation counselors and some administrators in knowing how college achievement of blind students with different educational backgrounds compare. The samples had a secondary school background of residential schools for the blind, regular public schools, and private or other. Students having a mixed background of public and residential schools are listed in the background of major, or most recent, schooling. Comparison in these school backgrounds was limited to the enrollment in colleges belonging to the North Central and Southern Associations. Since a small number had mixed educational backgrounds, they were extracted as an additional background although they were included in the residential and public school groups.

In these colleges thirty-three of the experimental and twenty-two of the control sample had residential school backgrounds. Thirteen of the experimental and twenty-three of the control sample had public school backgrounds. Only three of the experimental and one of the control sample had private or other secondary backgrounds. Performance is tabulated in Table 28 for each sample.

Table 28 Comparison of Each Sample by Secondary School Backgrounds

Experimental					Background	Control				
No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA		Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA	No.
33	28	26	93%	2.62	Residential	27	26	93%	2.35	22
13	26	24	92%	2.34	Public Sch.	28	25	89%	2.70	23
3	19	17	89%	1.37	Priv. & Other	34	31	91%	2.80	1
4	27	25	93%	2.97	Mixed	27	27	100%	3.40	2

The comparison of Table 28 placed the students of both samples in the same grade letter classification C+ or B- with the exception of one school background each. In the experimental sample with a school background of private and other, the grade point average indicated a grade of D+. For the control sample with a mixed school background, the grade point average indicated a grade of B+. The grade point average of the experimental sample with a mixed school background was also the next highest and, if grades of minus and plus were used on a distribution scale, of .50 below to .50 above would rate a B- but on a whole number distribution would be a C grade.

In order to more sharply focus on school background, Table 29 shows the achievement on the factors of comparison without reference to the project classifications of experimental or control samples.

Table 29 Comparison of Performance by School Backgrounds

School Background	No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA
Residential	55	27	25	93%	2.62
Public School	36	27	24	89%	2.52
Private & Other	4	23	21	91%	1.72
Mixed	6	27	25	93%	3.11

The obvious divergent patterns shown in Tables 28 and 29 are in the school background of private and other. Of the four cases in this classification of school background, two were in the experimental sample and both had been evaluated as doubtful college candidates. Their case study revealed both to have rather severe multiple disability. The study indicated their enrollment in the secondary educational institutions of this classification was based on their needs for exceptional services which were not available in the other secondary educational sources. The fact that their achievement in the exceptional facilities permitted them to be considered for college is an indication of the problem faced in their evaluation and guidance. Other data in this study indicated that private facilities were used when individual differences were so accentuated that progress in other facilities could not be expected or achieved.

The performance of students with residential and public school backgrounds was within the same range of quality and quantity of work. However, in a highly competitive situation, the residential students would have a comfortable advantage in quality as well as quantity.

Students having mixed background of schooling ranked well above those of other backgrounds in quality of performance and with the residential background in the amount of work completed. The implication afforded a wider range of personal experience than was afforded by either background alone. However, this is an implied conclusion on which additional study is needed.

Comparison of Achievement of Students of Various Levels of Sight in Both Samples

This comparison was made on three functional levels of sight-- total loss, partial sight, and readers and writers. The comparison was made of the performance of the two samples and also for the samples combined for each level of vision. Table 30 shows the number of each sample in each level of sight, the enrolled load, the amount and percent of enrolled courses completed and the grade point average.

Table 30 Comparison of Sample Performance in Each Level of Sight

Experimental						Control				
No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA	Functional Sight Levels	No.	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA
30	26	24	92%	2.64	Total Loss	12	27	26	96%	2.79
9	29	26	90%	2.41	Partial Sight	14	25	24	92%	2.38
10	26	23	88%	1.91	Readers & Wr.	20	29	24	84%	2.22

With the exception of the partially sighted of the experimental sample, Table 30 presents a very consistent pattern of decreasing performance in each sample as the level of sight increased. Students with a total loss of sight completed a greater percent of the course in which they enrolled than the partials and readers and writers. The partially sighted in the experimental sample completed more semester hours than the totals or readers and writers. The partially sighted in the experimental sample completed more semester hours than the totals or the readers and writers but did a lower quality of work than the totals. In the control sample the totals both completed more semester hours and did a higher quality of work than was done by the other two classifications in percent of work completed and grade point earned.

When the factors of comparison of the enrolled courses, amount of enrolled courses completed, and grade point averages were obtained for the three functional levels of sight without regard to the project samples, the pattern shown in Table 30 persisted. Table 31 shows the comparisons on the basis of functional sight only.

Table 31 Comparison of Performance by Functional Sight Levels

Sight Levels	Hrs. Enr.	Hrs. Cpl.	% Cpl.	GPA	No.
Total Loss	27	26	96%	2.68	42
Partial Loss	27	24	90%	2.39	23
Readers & Writers	28	24	86%	2.15	30

The three classifications used in Tables 30 and 31 emphasize functional performance rather than clinical degrees of sight. Students having a total loss of sight used methods designed to offset their handicaps in doing college work, which is an area of work highly oriented to the use of sight. Students classified as partials used less of the adaptive techniques and readers and writers used even less of such techniques. While the range of difference is only 0.53 of a grade point, in a highly competitive situation, it could be a very important value.

Comparisons of Above Average Performances

Foregoing comparisons have been made on the basis of group averages, which to some extent obscures the quality performances within the groups. A generalized, if not stereotyped, concept of the ability to achieve has been equated with the degree of disability. Notwithstanding, the rather persistent effort during and since World War II to emphasize, "It is ability, not disability, that counts," the traditional idea persists that the degree of disability may be equated with anticipated achievement. With the instance of blindness, total blindness would be equated with low achievement possibilities and possibly shut the door to opportunities for development of abilities.

The following comparisons of the three levels of sight and above average achievements of both samples and of the project population may be helpful to all concerned with rehabilitation planning. Of the ninety-five students in accredited colleges, thirty-one (33%) earned grade point averages of 3.00 and above, which is above average on a four-point grade point system. Table 32 shows comparitive ratios of the total project population and the subsamples that achieved grade point averages of 3.00 and above for each of the three functional levels of sight.

Table 32 Above-Average Achievement of the Three Levels of Sight

Groups	No. with 3. + GPA	Totals		Partials		Readers	
		No.	%	No.	%	No.	%
Project Population	31	19	64	6	19.3	6	19.3
Exper. Sample	16	12	75	2	12.5	2	12.5
Control Sample	15	7	47	4	26.5	4	26.5

Table 32 shows the highest ratio of students achieving above average academic performance were in the classification of total loss of sight. This data should not be interpreted to indicate that a total loss of sight increases one's ability or lessens the handicap. The most reasonable assumption to be drawn in the light of rehabilitation experience is that the students having a total loss of sight have accepted their disabilities and developed techniques of performance that enables them to compete with their fellow sighted classmates on a more nearly equal basis.

Major Fields of Study Chosen by the Blind Freshmen

The study of this area included the entire project population of 103 students and included all colleges regardless of their accreditation. The on-campus follow-up found that eight (15%) of the experimental and seven (17%) of the control samples said they were undecided on the major field of study before they enrolled. This compares favorably with a study of a much larger freshman population in which it was found that twenty percent were undecided at the time of their enrollment.[24] By the time the campus follow-up interviews were made--seldom before nine weeks--this had changed. At that time, fifty (94%) of the experimental and forty-three (87%) of the control students had chosen a major field of study, or at least were willing to name a field . A few indicated a change might yet be made, and it is not known how solidly a freshman's choice stands for the three succeeding years.

Thirty-four major areas of study were chosen by the two project samples. Eleven majors were chosen by the experimental sample that were not duplicated by the control sample. They were: agriculture, art education, special education, secondary education, church music, journalism, music education, philosophy, public relations, typist, and Spanish. The control sample chose nine major areas of study not duplicated by the experimental sample, i.e., industrial education, religious education, chemistry, liberal arts, meteorology, ministry, mathematics education, physics, and social science. Fifteen fields of major study were duplicated by the two samples: business administration, general education, elementary education, health and physical education, English, music in general, electrical engineering, history, language, law, mathematics, psychology, political science, social work, and sociology.

An analysis of the thirty-four major areas by fields of placement indicates a predominant choice of courses related to the education field, or teaching, rather than to a business use, even if it were professional. However, thirteen of the majors chosen by a limited number were selected with some thought on the part of the student that it could be used as a means of self-employment as an independent professional, as well as an employed professional. Such majors as law, health and physical education, as examples, could provide an opportunity to work as an independent professional, an instructor in a school, or an employee in a business establishment which needed such a service.

The largest single classification of majors related to a definite area was that of education. Twenty-eight (27%) of the 103 chose majors related to teaching. This ratio of students is slightly less (27% as compared to 28.4%) than the choices made by the much larger sample of freshmen to which previous reference has been made.[25]

Study of the unduplicated choices of the two samples gave no reliable clue that the degree of blindness was responsible for the decision. Individual preference seemed to be the motivation. Table 33 gives the classification of choices of major areas of study and the number of students making each choice.

Table 33 Major Fields of Study CODE: E=Experimental C=Control

Duplicated Choices			Experimental Choices		Control Choices	
	No. E	No. C		No.		No.
Business Admin.	3	1	Agriculture	1		
Education:			Art Education	1	Education:	
General	3	2	Special Educ.	2	Industrial	1
Elementary	5	5	Secondary Educ.	1	Math	1
Health & P. E.	1	4	Music-Educ.	1	Religious	1
English	3	3	Music-Church	1	Chemistry	1
Music, General	2	2	Journalism	1	Liberal Arts	1
Electrical Eng.	1	1	Philosophy	1	Meteorology	1
History	2	3	Public Relations	1	Ministry	1
Language	2	1	Typist	1	Physics	2
Law	1	1	Spanish	1	Social Science	3
Mathematics	7	2				
Psychology	3	2				
Political Science	1	1				
Social Work	1	2				
Sociology	3	1				
15 Fields	38	31	11 Fields	12	9 Fields	12

Employment or Placement Implications

Obviously many of the majors in Table 33 are used in different ways. An electrical engineer could be an instructor in an engineering college, but he could also become a factory superintendent, a radio station consultant, or an entrepreneur. Various levels of achievement, as well as personality qualities, might be the factor or factors determining the alternative for which such an education could be used. In some instances the interviewer had to interpret the implication given to determine the intended use of a major.

The following three classifications of professional, vocational, and vocational-professional seemed to describe the way these students felt about the use of their major study areas. Professional status seemed to mean to them that a person must work in a school or some institutional setting. Vocational status appeared to mean to them that a person must work either as an independent or in a business or commercial establishment. Some students seemed to see their major as being flexible enough to permit their education to be used in either or both--a vocational or a professional setting. On this scale of classification, they seemed to see twelve professional majors, thirteen vocational majors, and nine vocational-professional majors. A comparison of the stated intended use of the two dominant choices, elementary education and mathematics, illustrates this thinking. All of the ten students who chose elementary education as a major implied or said they were preparing for the professional field. However, only one of the ten who chose mathematics stated that he was planning to enter a professional field and the other nine saw the major as one leading to a job with computer operation the chief vocational objective. Ranked in order of preference, elementary education and mathematics with ten each ranked first; English with six ranked second; general education, history, health and physical education, and psychology with five each ranked third; business administration, general music, language, including Spanish, and sociology each with four ranked fourth. Predominantly, these majors are the areas offered by liberal arts colleges.

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[24] In and Out of College. op. cit. page 67.
[25] Ibid., p. 64.

CHAPTER VIII

RESULTS: SUGGESTIONS OF COLLEGE PERSONNEL FOR ADDITIONAL PREPARATION OF BLIND STUDENTS FOR COLLEGE

Method of Obtaining and Extent of Suggestions

A knowledge of how to better prepare blind students for college was one of the anticipated outcomes of the project. It was felt by the planning committees that much could be learned by asking college personnel for their suggestions. This final question was directed to all college personnel who were interviewed in the study: "'As we have been discussing blind freshmen, have suggestions occurred to you as to how rehabilitation agencies might better prepare these students for college?'" In asking the question no emphasis was made of whether the student belonged to the experimental or control sample. Some had no suggestions to make but the majority did. Several hundred individual suggestions were received. When obvious duplications were eliminated, 230 suggestions were received.

Organization of Suggestions

The suggestions have been arranged in ten functional classifications as they relate to student preparation and are listed as the suggestion from the position of the college person making it. The only qualitative value given a suggestion is its order of listing. Suggestions are listed in the order they ranked by the number of times they were made by persons in the same college position. In an effort to reveal the differences seen by college personnel associated with students in the two samples, their suggestions are listed under these two classifications. Suggestions that were made by an equal number of college persons working with the two samples are indicated by double asterisks. A duplicated suggestion is listed under the classification which mentioned it most frequently and marked with a single asterisk to indicate that the personnel working with the other classification of students also mentioned it.

The ten functional classifications relating to student readiness for college are: Attitude, Skills, Guidance, Obtaining Help, Adaptations, Planning, Self-direction, Social Performance, Use of Resources, and Academic Preparation.

Charts of Functional Classification of Suggestions

Suggestions of College Personnel--By Functional Classification and By Whom Made

I. ATTITUDE

Experimental Sample	Control Sample
Deans Suggestions	
*1. Expect no favoritism and do the work. 2. Know that college and home are different and home is not	1. Carry no chip on the shoulder. 2. Face ones limitations openly. *3. Overcome withdrawal and become outgoing toward others.

I. ATTITUDE (Continued)

Experimental Sample	Control Sample
Deans Suggestions (continued)	
duplicated in the college. 3. Expect and accept some inconveniences. 4. Accept disability and work rationally.	
Advisors' Suggestions	
*1. Expect to meet standards of academic requirements. *2. Expect high standards of conduct in private controlled colleges. *3. Develop and keep a positive attitude. *4. Recognize the demand for a big volume of work. 5. Accept the instructors as a helping person not a driver. *6. Make personal adjustment before coming to college. 7. Build one's confidence by the knowledge of being ready and capable. 8. Accept limitations as normal.	*1. High motivation should be present. 2. Accept oneself as is. 3. Expect rejection by some.
Dormitory Supervisors Suggestions	
*1. Expect more difficult work than high school. *2. Face problems realistically 3. Develop a positive attitude.	1. Take no advantage of being handicapped.
Other Professors Suggestions	
*1. Make problems known early. *2. Make purposeful effort at early adjustment. 3. Expect endless work. 4. Expect stiff competition in college. *5. Face up to the demands without expecting favors.	1. Compete cheerfully and with high motivation. 2. Recognize that a greater amount of work will be required. 3. Develop self-confidence. 4. Become personally adjusted soon. 5. Respect the importance of blackboard work.
English Professors Suggestions	
*1. Develop personal and social maturity. 2. Be fair with instructors. 3. Expect continued pressure. 4. Take a positive attitude toward college. *5. Recognize competitive nature of college.	

II. SKILLS

Experimental Sample	Control Sample
Deans' Suggestions	
*1. Become proficient with aids and tools of adaptations. *2. Develop typewriting skills. 3. Develop Braille skills highly. 4. Develop learning skill by listening--use the ears efficiently.	*1. Take notes well. 2. Develop skill in taking tests and examinations.

Advisors' Suggestions

1. Develop note-taking efficiency. 2. Learn to do essay tests.	1. Develop note-taking efficiency. 2. Typewriting skill is an essential. 3. Travel skill should be more highly developed. 4. Develop Braille skill.

Dormitory Supervisors' Suggestions

*1. Develop orientation and travel skills for campus and dormitory living. 2. Learn to use recording equipment quietly.	

Other Professors' Suggestions

1. Develop typewriting skills highly. 2. Learn to use tape recording equipment efficiently. *3. Learn Braille usage well. 4. Learn to use slate more quietly. 5. Develop test-taking skill.	*1. Develop note-taking skill. 2. Develop listening skill. 3. Develop auditory learning efficiency. 4. Develop handwriting. 5. Learn better mobility and travel skill.

English Professors' Suggestions

*1. Learn to use their ears--listen!! **2. Learn handwriting. 3. Develop note-taking organization and skill.	1. Develop typewriting skill to a proficient level. 2. Develop reading skill. 3. Learn to express ideas. 4. Develop Braille note-taking skill.

III. GUIDANCE

Deans' Suggestions	
**1. Guidance for the students and their family toward a mature and stable attitude. 2. Select the major department discreetly. 3. Carefully consider the course limitations for them vocationally and academically.	1. Realism in selecting the college. 2. Work with rehabilitation counselor closely beforehand.

III. GUIDANCE (Continued)

Experimental Sample	Control Sample
Deans' Suggestions (continued)	
4. Sense the problem before it becomes acute and talk to the advisor.	

Advisors' Suggestions

1. Obtain more guidance before entering. **2. Select qualified students before enrolling them. **3. Seek guidance and be realistic in selecting schools. 4. Avoid commercial fields. 5. Recognize difficulties in technical courses such as science and math. 6. Select courses carefully.	1. Select major area of study more carefully. 2. Work closely with advisors after enrolling. 3. Select colleges of less than 6,000 enrollment.

Dormitory Supervisors' Suggestions

1. Be well prepared for college. 2. Recognize the validity of test results. 3. Obtain guidance before enrolling.	1. Provide guidance for parents before their child enrolls in college.

Other Professors' Suggestions

1. Choose major carefully.	1. Select small classes, even unpopular courses, perhaps.

English Professors' Suggestions

1. Vocational guidance is badly needed.	

IV. OBTAINING HELP

Deans' Suggestions	
*1. Overcome reluctance to seek help. **2. Respect and appreciate a reader's service by conserving his time by punctual regard for scheduled appointments. 3. Arrange for adequate reader service. 4. Use the "buddy" system in laboratory work.	1. Select readers from same class. 2. Rehabilitation counselors should provide competent readers.

IV. OBTAINING HELP (Continued)

Experimental Sample	Control Sample
Advisors' Suggestions	
1. Select readers early before or immediately after enrollment. 2. Counselors should visit campus before enrolling client and some afterwards. 3. Ask for help when needed.	1. Inform instructors! 2. Accept and work with the administration. 3. Obtain good readers, persons who can read well.
Dormitory Supervisors' Suggestions	
1. Orient the dormitory supervisor to the blind person's needs beforehand. 2. Obtain readers on a business-like basis. 3. Make known the blind person's inadequacies. 4. Obtain dependable readers. 5. Obtain paid readers.	1. Ask for help courteously but without embarrassment.
Other Professors' Suggestions	
	*1. Make problems known early. *2. Get readers early and use effectively. 3. Recognize reading and recording problems and ask for help--diagnose trouble--ask. 4. Counselors should visit campus.
English Professors' Suggestions	
1. Develop a readiness but positive attitude toward asking for needed help. 2. Orient the instructor to one's problems. 3. Develop a respect and regard for readers. 4. Give professor a list of problems faced in his course. 5. Have a positive attitude toward an instructor.	1. Obtain readers--live readers. 2. Obtain capable readers.

V. ADAPTATIONS

Deans' Suggestions	
None	1. Student should know his own methods of working and confer with the professor about using them. 2. Seek a substitute for courses that cannot be done without sight.

V. ADAPTATIONS (Continued)

Experimental Sample	Control Sample
Advisors' Suggestions	
1. Devise own methods of taking examinations and make request to professors for permission to use. 2. Explore and devise own math and laboratory methods.	1. Use optical aids.

Dormitory Supervisors' Suggestions

*1. Get acquainted with the instructors. *2. Assume the responsibility for own needed adaptations.	

Other Professors' Suggestions

1. Experiment with tactual and audio equipment and methods. 2. Devise other math and laboratory devices in addition to Abacus. 3. Make adequate use of large print. 4. Learn Braille music methods.	1. Use all possible special aids. 2. Use tape and disc recordings more. *3. Take responsibility for needed adaptations. 4. Get and learn to work with a laboratory "buddy." 5. Develop a filing reference system. 6. Use optical aids. 7. Take notes on records--small machines. 8. Learn to use models in science. 9. Learn to take examinations on tape recording equipment. 10. Use Braillewriters for all examination questions and retain.

English Professors' Suggestions

*1. Use taped books. 2. Develop the use of auditory aids.	1. Use optica aids. 2. Use all possible special aids for the blind. 3. Use tape recorders for note-taking. 4. Rehabilitation workers should sponsor the setting up of special units in colleges for the blind.

VI. PLANNING

Deans' Suggestions	
1. Obtain tape and recorded books prior to opening date. 2. Take minimum course load and plan for longer college attendance. 3. Avoid laboratory and math courses by selecting other course majors.	1. Take light course load first semester. *2. Enroll early in year and prior to term opening. 3. Space class schedule to permit study periods in between.

VI. PLANNING

Experimental Sample	Control Sample
Advisors' Suggestions	
*1. Enroll in lighter course loads. *2. Get book lists early. 3. Select instructors carefully. 4. Arrange for orientation to campus before opening date.	*1. Do early planning and registration. *2. Have texts recorded before opening date.
Dormitory Supervisors' Suggestions	
1. Anticipate problems early. 2. Come to dormitory before school opening date and set up rooms. 3. Select roommate beforehand if possible.	1. Get taped and recorded books prior to class opening date.
Other Professors' Suggestions	
1. Select course of study early in year.	1. Orient oneself to the campus before class opening and major enrollment arrives on campus. 2. Obtain Braille tests prior to school opening. 3. Take difficult courses in the summer terms. 4. Register for courses offered in unpopular hours.
English Professors' Suggestions	
None	1. Arrange an early course planning date at college--one year in advance of admission. 2. Arrange for readers--early, prior to opening date.

VII. SELF-DIRECTION

Deans' Suggestions	
1. Student should know from course to expect and be prepared to get blackboard and laboratory work. 2. Concentrate on studies first.	*1. Student should obtain adequate orientation to campus. 2. Student should evaluate and know if he has developed dependable study habits. 3. Student should recognize need for and readily obtain tutor service. 4. Students need to learn to speak without verbosity.

VII. SELF-DIRECTION

Experimental Sample	Control Sample
Advisors' Suggestions	
1. Feel first responsibility in college is to the course of study. 2. Assume as much self-direction as possible to know college services and conference opportunities provided by instructors.	1. Recognize implied college status and overcome dependency and overprotective patterns of earlier life. 2. Plan study schedules and do work regularly.

Dormitory Supervisors' Suggestions

1. Teach them it is customary to turn out lights.	1. Student should construct a scale model or tactile map of campus to aid in orientation. *2. Teach them clothing care, grooming, and hygiene--constant recurring needs.

Other Professors' Suggestions

1. Develop the use of the remaining senses.	1. Have willingness to use unscheduled time for study and exploration of course.

English Professors' Suggestions

None	1. Blind students should have curiosity and knowledge about historically great blind persons. 2. Explore and critically examine their own personal methods and ways of doing things.

VIII. SOCIAL PERFORMANCE

Deans' Suggestions

1. Accept limited fraternal activities, first year, at least. 2. Improve attitude on activities. 3. Accept other students. 4. Develop sociability and means of entering into social relations in a reciprocative manner--be host.	None

Advisors' Suggestions

1. Study the informal, as well as the formal, ways of easily making friends. 2. Counselors might encourage home communities to give some recognition at civic clubs or	1. Dress normally. 2. Seek involvement in campus life in an appropriate field specialty but in other mass activities. 3. Develop social perception-study Amy or Emily on college handbook but

VIII. SOCIAL PERFORMANCE (Continued)

Experimental Sample	Control Sample
Advisors' Suggestions (continued)	
other activites.	learn propriety of social conduct. 4. Accept others. 5. Broaden their interests to areas that lead to social relations.

Other Professors' Suggestions

1. Enter into the college spirit.	None

English Professors' Suggestion

1. Affiliate with clubs and groups. Academic and study groups in freshman year.	None

IX. USE OF RESOURCES

Experimental Sample	Control Sample
Deans' Suggestions	
1. Agency representatives need to work more closely with faculty. 2. Students need more funds or provisions for using more specialized equipment.	1. Students need to know the available resources and how to use them wherever they go.

Advisors' Suggestions

1. Students should learn agency resources and means of using them while attending college.	None

Dormitory Supervisors' Suggestions

None	None

Other Professors' Suggestions

None	None

English Professors' Suggestions

None	1. Provide enough reader service to enable a student to do a standard college hour of work. 2. Provide tutors and extra study help in certain instances

X. ACADEMIC PREPARATION

Experimental Sample	Control Sample
Deans' Suggestions	
1. Prepare to be able to do required courses before seeking a college degree. 2. Place more stress in high	1. Learn to appreciate the college demands for hand and continuous academic performance. 2. Teach theme writing during the

X. ACADEMIC PREPARATION (Continued)

Experimental Sample	Control Sample
Deans' Suggestions (continued)	
school on both English and math courses. 3. Search their academic background and select strong in it for college candidates.	class period as a specific learning method in English. 3. Develop the memory while in high school. 4. Prepare for college as others would without regard for the handicap.

Advisors' Suggestions

None	1. Students today need four years of math to be prepared for college. 2. Spelling needs additional emphasis, throughout secondary education--very important in college level academic excellence.

Dormitory Supervisors' Suggestions

None	None

Other Professors' Suggestions

None	1. Prepare a sound academic background for college performance before considering college admission. 2. Take memory training before coming to college--it's needed then.

English Professors' Suggestions

1. Emphasize the use of magazines and current periodicals for resource materials in research, especially.	*1. If college is a goal, prepare in high school to be ready to meet college standards of work and take the required courses for a degree. 2. Learn how to use library materials easily. 3. Learn spelling as an essential before coming to college. 4. Learn in high school how to study effectively.

Priority for Additional Preparation as Indicated by Suggestions of College Personnel

A summation of the suggestions offered in each classification indicates areas of additional preparation needed by blind students. When the number of suggestions duplicated by sample personnel are taken into account, a consecutive order of ranking was found. According to this ranking, a priority of needed preparation was established, as shown in Table 34.

Table 34 Priority for Additional Preparation as Indicated by Suggestions of College Personnel

Rank	Suggested Areas of Need	Rank	Suggested Areas of Need
1	Attitude	6	Guidance
2	Skills	7	Social Performance
3	Obtaining Help	8	Self-direction
4	Adaptations	9	Academic Preparation
5	Planning	10	Using Resources

The final question to college personnel, instead of the first question of the on-campus survey, may have provided a more realistic appraisal of the over-all readiness of the blind student for admission to college. This ranking of need for additional preparation of blind college students indicated that attitudinal preparation is the greatest need. Their ranking of need by the college personnel closely resembles the evaluations of the project staff, as shown in Table 21, page 56. This evaluation showed that motivation was seen by the staff to be the third ranking negative indication for college for that group. The high ranking of skills is in keeping with the programs of all rehabilitation facilities for the blind and probably would be found to hold a similar high ranking for all facilities of general rehabilitation. It is the redevelopment of skill that creates a new ability to function by any person who has suffered a disability of handicapping proportion. Perhaps the suggestions are not new and possibly the same would be made for sighted students in much the same order of ranking.

CHAPTER IX

RESULTS: EVALUATIONS AND SUGGESTIONS OFFERED BY THE STUDENTS

Method of Campus Inquiries of Blind Students

Certain other inquiries were made of blind freshman students, both of the experimental and control samples, than those which have been mentioned in confirmation and comparisons with college faculty reports. Fifty-three students in the experimental sample and forty-nine in the control sample were interviewed in the campus follow-up of the project. A controlled interview survey form was used with both groups. In that respect they were controlled interviews, and the survey forms were identical for both samples except the final section.

General Impressions about College

The interviews with students were opened in much the same manner as they were with the college personnel. Lead-off questions were designed to obtain a general impression of the students' fellings about college. They were asked how they liked college in general and what they found enjoyable. They were then asked to state which of the following terms best described their felling about college: Very Satisfying, Moderately Satisfying, Rather Disappointing, or Unsatisfactory. Sixty-nine percent rated their experiences as Very Satisfying, twenty-three percent as Moderately Satisfying, two percent as Disappointing, and six percent as Unsatisfactory. In the control sample sixty-one percent rated their experiences as Very Satisfying, and thirty-nine percent as Moderately Satisfying. None of the control sample rated their experiences as Disappointing or Unsatisfactory.

When asked what they found especially enjoyable, the replies were very similar and were found to fit the pattern as shown in Table 35.

Table 35 Especially Enjoyable Aspects of College as Seen by the Two Samples

Enjoyable Aspects of College	Experimental	Control
1. "Oh, everything."	28%	26%
2. People and new friends.	30%	24%
3. Specific studies and general learning.	25%	30%
4. New adventure and personal liberty.	5%	2%
5. Social life and college activities.	4%	6%
6. Challenge of trying.	5%	6%
7. Nothing, all hard work.	3%	6%

This question called forth a startle from several students. It seemed they were surprised that pleasure or enjoyment was an aspect of college to be anticipated. Those who firmly held to their reply that nothing was enjoyable appeared to be very serious, though not bitter or cynical, but solemnly impressed that it required hard work--and work before pleasure or fun.

Each student was asked, "Are you finding significant problems?"' Both samples rated reading service as their major problem with fifteen percent of the experimental and eighteen percent of the control students reporting it so. Eleven percent of the experimental and eight percent of the control reported no problems of significance and both samples in equal ratio felt that the volume of work was, for them, the most significant problem. Some answers indicated peculiar differences between the two samples. Blackboard work was named as a significant problem by four percent of the experimental and by eighteen percent of the control students. Social problems were felt to be significant problems by six percent of the control sample but not mentioned at this point of the interview. Six percent of the experimental and two percent of the control students complained of problems in travel on the campus. One of the experimental sample enrolled in a large university dispaired of his college work until he recognized that he needed more orientation to the campus. After working this out he was happy with college. Twenty-six percent of the experimental and eighteen percent of the control students named specific courses as their most significant problems in college. Math and science ranked first with each sample.

Course Adjustments in First Semester

Course adjustments in the first semester was set up in the project as an indication of difficulty in college. Inquiries about schedule changes and course drops found that thirty-one percent of the experimental and twenty-three percent of the control students said they had made such changes.

Limitations in Course Choice Felt by Colleges and Students

It was felt that some measure of the concern of college personnel about admitting blind students would be reflected in their efforts to guide the choice of subjects in which students enrolled. As a measure of this concern, each student was asked, "Were there any subjects you wanted to take that the college discouraged your taking?"' Eleven percent of the experimental and eighteen percent of the control sample answered in the affirmative. Nine percent of the experimental and sixteen of the control sample felt the restriction was due to the visual problem. However, eight percent of the experimental and fourteen percent of the control students stated, when asked, that they agreed with the college in restricting their subject choice on the basis of the visual problem.

Students were then asked, "Did the college insist upon your taking any subjects that you preferred not to take because of your blindness (poor sight)?" Twelve percent of the experimental and two percent of the control said, "yes." When asked how they were doing in the course, all of the control students said, "no problem," and two-thirds of the experimental said, "satisfactorily." In both instances, that of limiting the courses and that of insisting upon certain courses, the degree of agreement and success indicated the validity of the guidance given in the choice of subjects.

Admission Arrangements and Problems

Some students expressed the feeling that registration was a nightmare. When asked to explain they said it was the endless standing press of the crowd and noise--just a tiresome and exhausting day. Those students who had experienced a second enrollment felt it was not so trying. In reply to the question, "How did you handle registration?" eighty-six percent of the experimental and seventy-seven percent of the control students said they went through registration in regular order. Twelve percent of the experimental and nine percent of the control students said they registered in irregular manners. When asked to clarify this description, it was found that some were given a special proctor or aid who completed their class cards and obtained the instructors' signatures for them and some were given the cards and permitted to return them the next day. Fourteen percent of the control students had registered prior to the registration date. Ninety percent of the experimental and sixty-nine percent of the control students had someone besides themselves to fill out their class cards.

Freshman classification tests were required of forty-one percent of the experimental students and fifty percent of the control students. Classification tests were given by three different methods. For the experimental students, the oral method was used in half the cases, and self-reading and writing in half the cases for the control students and Braille copies were used in twelve of the cases. Eighty-six percent of both samples had decided on their major fields by the time they enrolled. Sixty percent of the experimental and fifty-seven percent of the control students had decided what course they would take before September enrollment dates; however, only thirty-nine percent of the experimental and thirty-seven percent of the control students were able to have some of their text books recorded or taped before classes started. The chief reason given for this lack of readiness was insufficient time between getting the book list and class opening dates. Students who were able to use local recording sources met with better success than students using distant sources.

Equipment Possessed and Needed

Eighty-eight percent of the experimental students and seventy-four percent of the control had possession of a typewriter. Half of the students who had no typewriters in their possession said they needed one and half of them said they did not. Seventy-eight percent of the experimental and sixty-eight percent of the control students had tape recorders. Approximately eight percent of the experimental students who had tape recorders said they did not use them but practically all who did not have one said they needed one. Only eighty percent of the control students who did not have tape recorders said they needed one. The major use (20%) by both samples of tape recorders was for readers recording their readings for the blind students' review and re-read. Dictating class notes for review, recording lectures, taking notes in class, preparing oral themes, and having books taped were other uses made of tape recording equipment, but each less than the major one mentioned. The chief complaint the use of tape recording equipment was their weight--too heavy to carry around the campus.

Braillewriters were in the possession of forty percent of the experimental students and twenty-seven percent of control students. However, only twelve percent of the experimental students who did not possess a Braillewriter felt that they needed one, and less than five percent of the control students without one felt that they needed one.

Special equipment for note-taking, studying, and reading assignments were used by foty-nine percent of the experimental and forty-two percent of the control students. The slate and stylus ranked first and small recorders, both steno-mask and other, ranked second with both samples.

Management of Reading

Difficulties with reading assignments were reported by thirty-seven percent of the experimental and forty-three percent of the control students. Inquiries about methods of reading found that six methods were used: Braille, sighted readers, tape recordings, disc recordings, ink print, and other (i.e., optical aids, etc.). Forty-four (83%) of the experimental students and nineteen (39%) of the control students used sighted readers for fifty-five to eighty-five percent of their reading. Tape recording was used as the predominant supplemental method to sighted readers, with disc recording ranking second and ink print third by the experimental students, but disc recordings were used more by the control students and tape recorders ranked second for them as a supplemental method. Thirty-two percent of the control students reported that they used ink print for eighty-five percent to one hundred percent of their reading, while only eight percent of the experimental students used ink print to that extent. Braille copy and reading ink print with an optical aid were the methods used the least by both samples.

The number of sighted readers used ranged from one to thirteen by the experimental and from one to eight by the control students. Twenty-nine (55%) of the experimental and twenty (41%) of the control used only one or two readers. The average number of readers used by the experimental student was 2.5 and for the control students 2.4. Sixty-four percent of each sample purchased their reader service and paid on hourly basis, ranging from fifty cents to one dollar twenty-five cents. Rehabilitation agencies paid for ninety-six percent of the reader service for the experimental students and for seventy-one percent of the purchased reading for the control students. Students paid for the remaining reader service with some minor instances of assistance from others. In some instances students and others supplemented the hourly rate or attempted to recompense when the rate was felt to be too low. University and college special service departments were the principal sources from which reader services were obtained. The dean's office and friends ranked second as a source of reader service. Eighty-five percent of the experimental students and sixty percent of the control students used their readers on a scheduled basis. In offering advice to others about getting reading done, an almost equal number offered three suggestions: obtain readers in the same majors, use female readers, and obtain tape and recorded books early. An equal number of both samples advised that reading should be done on a schedule. The dormitory was the place used for reading by forty-three percent of the experimental and thirty-five percent of the control students with any convenient place ranking second, the library third, and the home ranking fourth by a very narrow margin. Almost all students used more than one place at various times for sundry reasons.

Presenting Problems for Adaptations

It has been observed that college personnel felt the handicapped student should know his problems, the practical adaptations needed, and take the initiative in asking instructors how they might be used. The project stressed this course of action and consequently was concerned about its practice. An inquiry was directed to the students of both samples in the following form: "When did you first talk to professors about test arrangements?" Among the experimental sample seventy-six percent talked with them the first day in class, sixteen percent talked with them during the first week, and eight percent by the end of the first month or when the examinations were announced. Of the control sample forty-seven percent reported talking to the professors the first day, fourteen during the first week, twenty percent during the first month, eight percent at the end of the semester or when the examination was announced, and eleven percent had not discussed arrangements at all with the professors.

In one instance one member of the experimental sample who had delayed making know his problem in taking examinations until the day of the examination that was scheduled. This proved to be a very unsatisfactory experience for both the student and the professor. This and other over-sights, no doubt, were important factors in the student's dropping the course immediately and eventually dropping out of college for the subsequent semester.

The report of both samples indicates that modifications were made in tests to accommodate their problem due to loss of sight. Approximately twelve percent of the experimental and seven percent of the control samples reported that such modifications were made. They also felt that only justifiable consideration was given; and, if any different from that given to the other class members, their tests were more difficult.

Financial Situation of Students

Students of both samples were asked about finances. The inquiry, "Have finances been a problem to you?" To this twenty-three percent of the experimental and sixteen percent of the control sample gave an affirmative reply. Insufficient finances for incidental expenses was felt to be the area of greatest stringency with the need for equipment and food allowance being next. Expenses of dating, transportation, and losses of money loaned to other students each ranked equally, as reported. None of the experimental sample worked, but one of the control sample had a part-time job that provided his meals.

Seventeen percent of the experimental samples and twelve percent of the control were planning to find campus employment.

Student Suggestions for College Preparation

One of the project goals was to determine, if possible, what should be in a curriculum for additional preparation for college after graduation from secondary schools. Two similar questions were directed to members of each sample in an effort to obtain their priority by free suggestion. The experimental students were asked, "Now that you have been in college for several months, can you tell me what parts of the College Preparatory Course were the most helpful to you in adjustment to college?" Nineteen unduplicated suggestions were received and are given here in the ranked order and the times mentioned:

Number	Rank	Parts of Course Most Valued	Instances
1	1	Academic instruction--English	15
2	2	Mobility and travel training	11
3	3	Note-taking	10
4	4	All parts were equally helpful	8
5	5	Techniques of personal management	3
6	5	Group discussions of problems	3
7	5	Social skill instruction	3
8	6	Examinations	2
9	6	How to obtain and use readers	2
10	6	Association of college-level students	2
11	7	Association with the "Elite of the Blinks."	1
12	7	Social activities--"Getting out of my shell."	1
13	7	Overcoming homesickness	1
14	7	Listening to lectures	1
15	7	Neighborhood travel training	1
16	7	Counseling	1
17	7	Typing	1
18	7	Braille	1
19	7	Abacus	1

The control students were asked, "If you could have attended a short summer course designed to help you prepare for college, what sort of things would it have been helpful to learn?" Thirteen suggestions were received and are presented in their order of preference with the number making the suggestions:

Number	Rank	Suggestions	Instances
1	1	All training is valuable	9
2	2	Academic instruction	7
3	2	Mobility and travel training	7
4	3	Note-taking	5
5	3	Usage of Braille	5
6	4	How to study	4
7	5	Reading development	3

(continued)

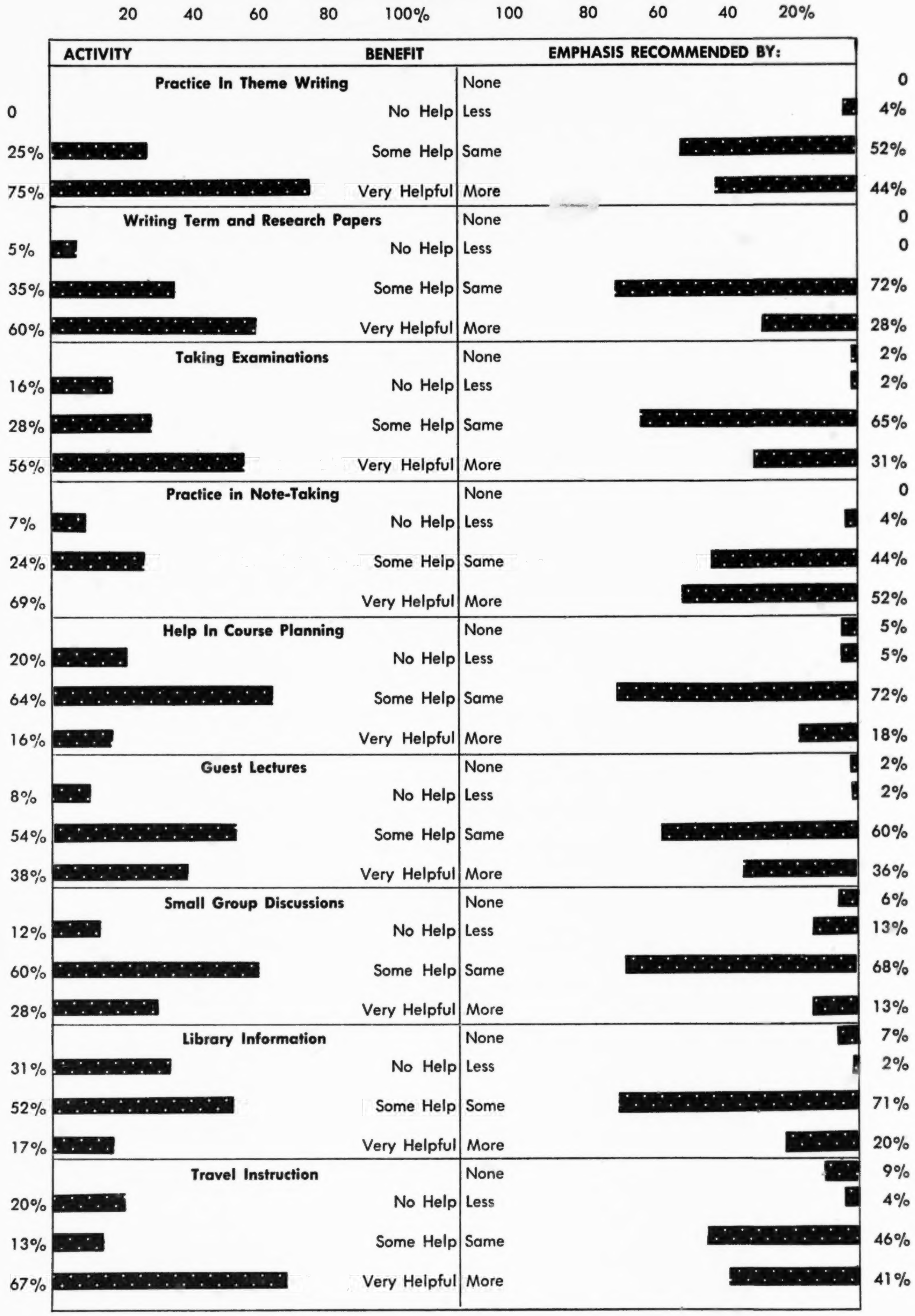
Number	Rank	Suggestions	Instances
8	6	How to use readers	2
9	6	Use of recording equipment	2
10	6	Counseling	2
11	7	Social skills	1
12	7	College-level association	1
13	7	Training in listening	1

This inquiry was more difficult and also less productive for the control than for the experimental students. They had not experienced a course of preparation and were placed in a position of projection. Control students gave general replies of an affirmative nature that most anything might help, but when pressed to be as specific as possible, were able to mention the specifics listed. Only three of the control sample indicated no need and only one seemed to see additional preparation in a questionable light. It is a point to note that academic instruction, travel and mobility, and note-taking fall within the same ranking of importance in this relatively free suggestion listing.

Evaluation of Specific Activities in Preparation for College

A direct probe and controlled response was made to obtain an evaluation of specific activities within the course that was conducted in the project. To the experimental students, the following statement was made, "I'm going to list several activities within the course and I would like to know how you feel now about them. I'd like to know, first, if the activity was helpful to you and, second, if with your present experience, you would recommend the amount of emphasis placed on each activity." A three-degree rating scale was used to classify the replies for evaluating the benefit received. A four-degree rating scale was used to classify the amount of emphasis recommended. Seventeen activities used in the course were read to the students and their replies recorded. The activities, evaluation of benefit, and recommendations for emphasis are set out in Figure 1.

FIGURE 1 — EXPERIMENTAL SAMPLES EVALUATION OF ACTIVITIES IN COURSE AND THE RECOMMENDED EMPHASIS ON EACH



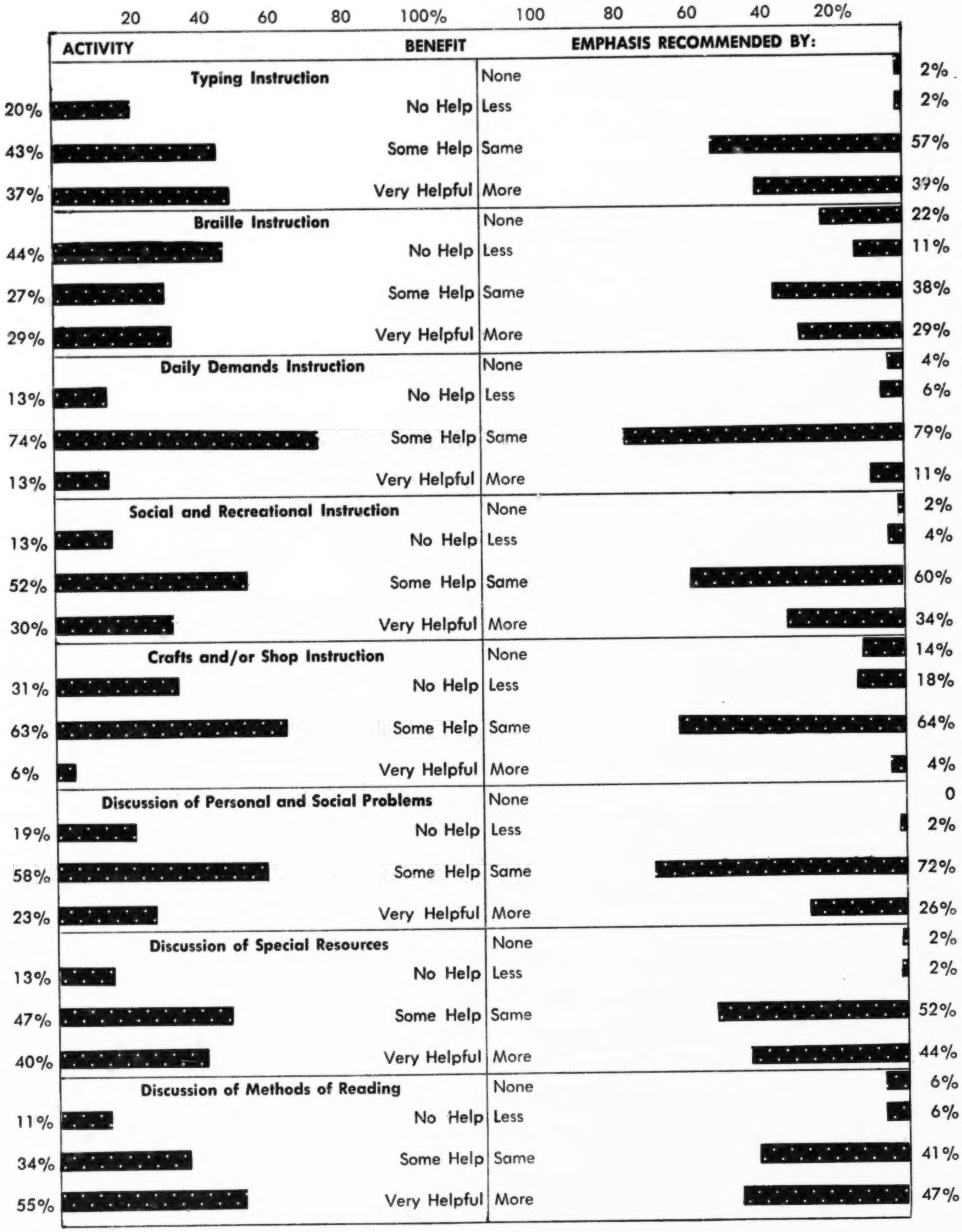


FIGURE 1 (CONT.) — EXPERIMENTAL SAMPLES EVALUATION OF ACTIVITIES IN COURSE AND THE RECOMMENDED EMPHASIS ON EACH

Figure 1 discloses the evaluation given and the emphasis recommended by the experimental sample only. Of the seventeen training activities, they rated six as Very Helpful, ten as of Some Help, and one as of No Help. Braille was the only training activity rated as of No Help. It was recommended, however, that Braille be given the same emphasis. This rating and recommendation should be studied in the light of the experience of this sample. The experimental sample had a larger number of totally blind than partially sighted who had experience with Braille and probably felt less need for improvement. The recommendation that the same emphasis be given it indicated the importance they attached to its being in the course. The degree of problem of note-taking, as stated by both samples and the college personnel, lends emphasis to the need for skill in this area, whether Braille be the method or some other.

The rating given crafts and shop should be observed. These activities have been the focus of considerable attention by persons working in rehabilitation facilities for the blind. There have been expressions of depreciation even to the elimination of such training activities in any facility group, but especially for a college-bound group. Sixty-three percent of the experimental sample felt it had been of some help and sixty-four percent recommended that it be given the same emphasis.

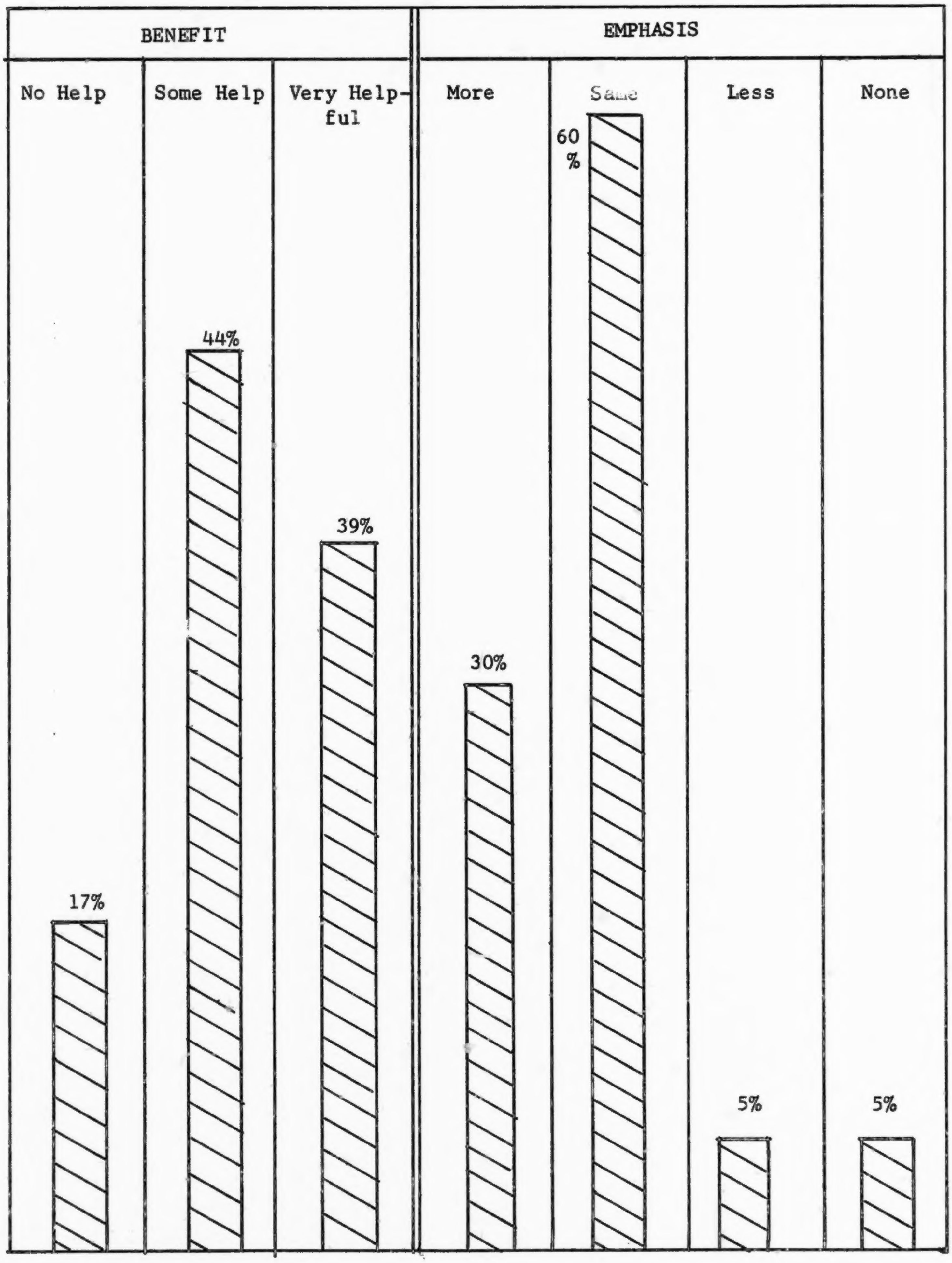
Over-all Evaluation and Composite Index for Evaluation of Both Samples

The over-all evaluation and recommended emphasis of the experimental sample is shown in the composite graph, Figure 2.

The full meaning of Figure 2 indicated the activities used in the college preparation course were beneficial to a very satisfactory degree. Forty-four percent felt that the activities had been very helpful to them and thirty-nine percent felt they had received some help. The two combined gave a ratio of four-to-one feeling benefit. Emphasis recommendations were even more positive with sixty percent feeling the emphasis should not be decreased and thirty percent feeling emphasis should be increased--a total of ninety percent positive indication. For a rehabilitation facility, the composite feeling should indicate careful screening in order to more exactly fit the need of the one-in-five who felt no benefit and the one-in-twenty who felt no need as reflected in Figure 2. The composite percent in each classification of value and degree of emphasis affords a basis of priority ranking for both samples. Comparison of evaluations of both samples is shown in Figure 3.

FIGURE 2-COMPOSITE EVALUATION OF ACTIVITIES AND EMPHASIS

Recommended by the Experimental Sample



A comparison of felt benefit and felt need held promise of guidance to the rehabilitation facility for evaluating what had been done in the college preparation course and also for planning. The experimental sample could make assessments of felt benefit as a result of having been enrolled in the course. The control sample could be expected to express only felt need after having experienced college work in which self-assessment had taken place.

The comparisons of the evaluations of both samples are made on fourteen activities only; whereas, an evaluation had been obtained from the experimental sample on seventeen activities and from the control sample on fifteen activities. A study of Figure 3 showed agreement in rating of twelve of the fourteen activities. The two activities in which they disagreed are such universally accepted areas of importance to the blind that the disparity of evaluation is worth a second look. On Figure 3, the activity, "Instruction in Travel," was rated by sixty-seven percent of the experimental sample as "Very Helpful," while fifty-three percent of the control sample rated it as "No Help." The other activity, "Instruction in Clothing Care and Meeting Personal Needs Independently," was rated by seventy-four percent of the experimental sample to be "Some Help;" but it was rated by sixty-two percent of the control sample to be of "No Help."

One of the activities on which the two samples agreed in rating "No Help" was "Instruction in Braille." Forty-four percent of the experimental sample felt they received no benefit from Braille instruction and sixty-three percent of the control sample felt that it would not have benefited them. This agreement in rating this skill needs a second look, also. Braille was the predominant method used in note-taking by the experimental sample, and while forty-four percent of the experimental sample felt no benefit from instruction during the course, twenty-seven percent felt "Some Benefit" and twenty-nine percent felt it was "Very Beneficial." Some caution must be exercised in the interpretation of ratings on a scale of this kind as shown in Figure 3.

Figure 4 indicates the relative close agreement of the two samples about the over-all helpfulness of the course.

FIGURE 3 — COMPARISON OF EVALUATION MADE BY BOTH SAMPLES OF THE SPECIFIC ACTIVITIES IN THE COURSE

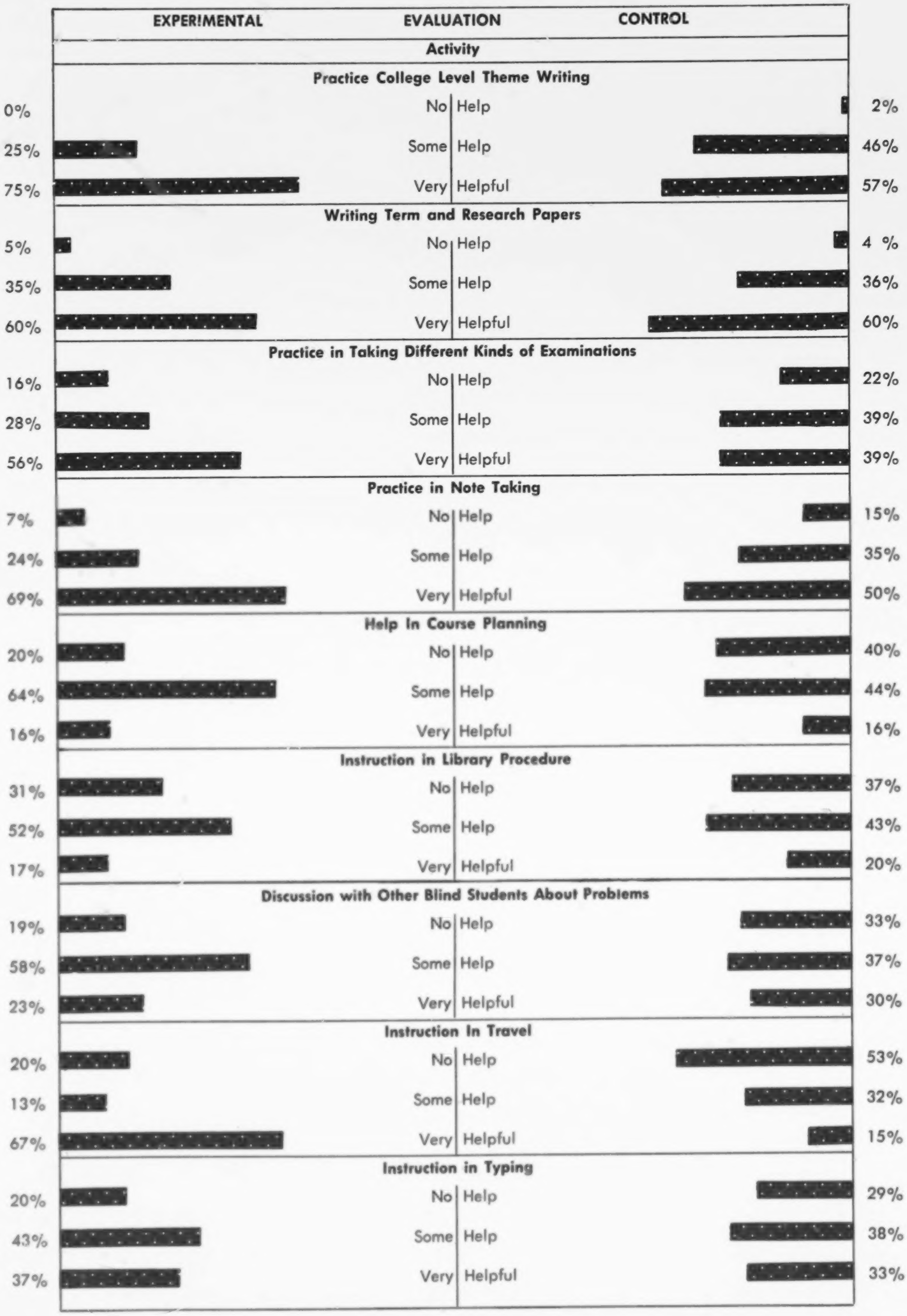
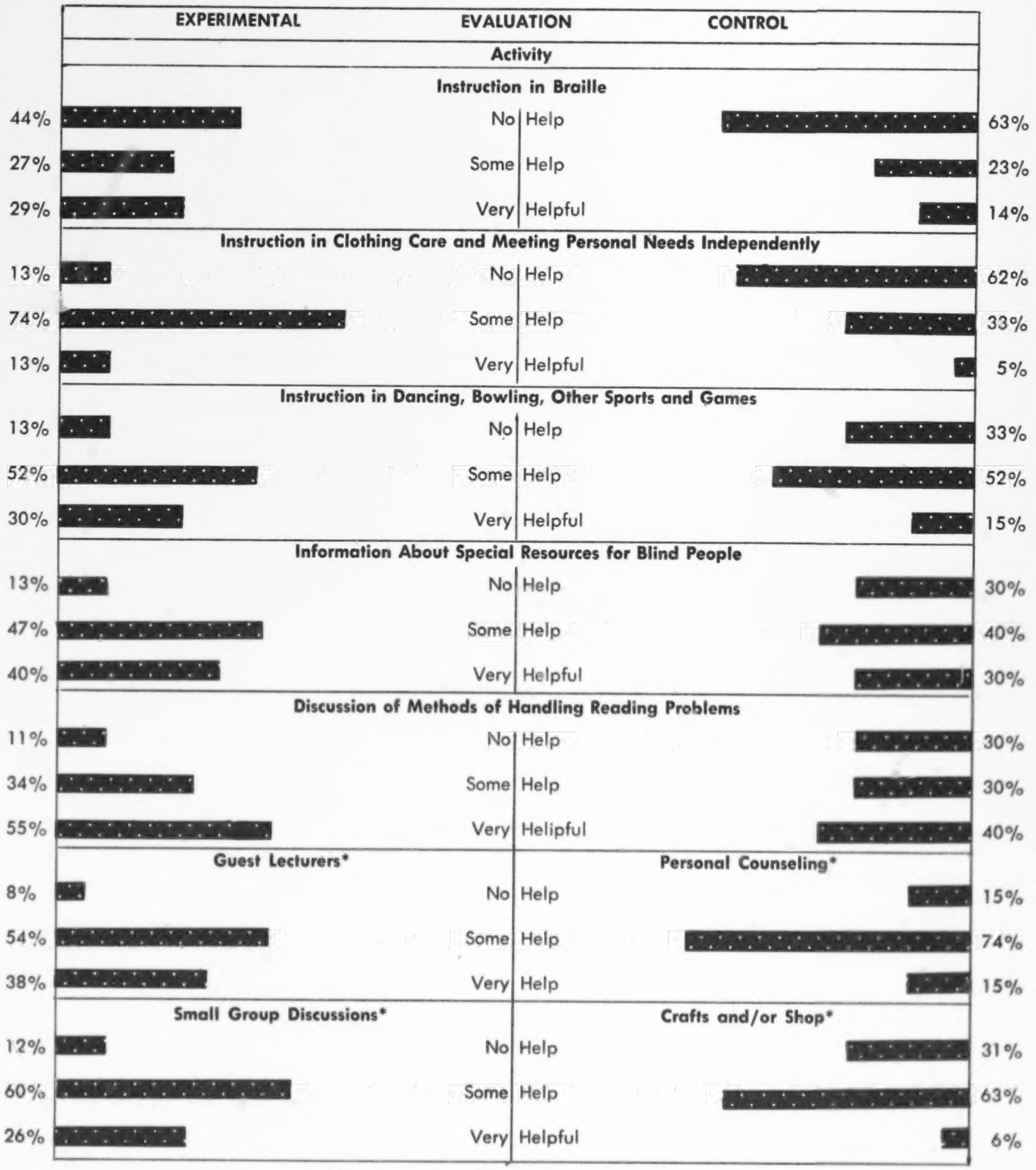
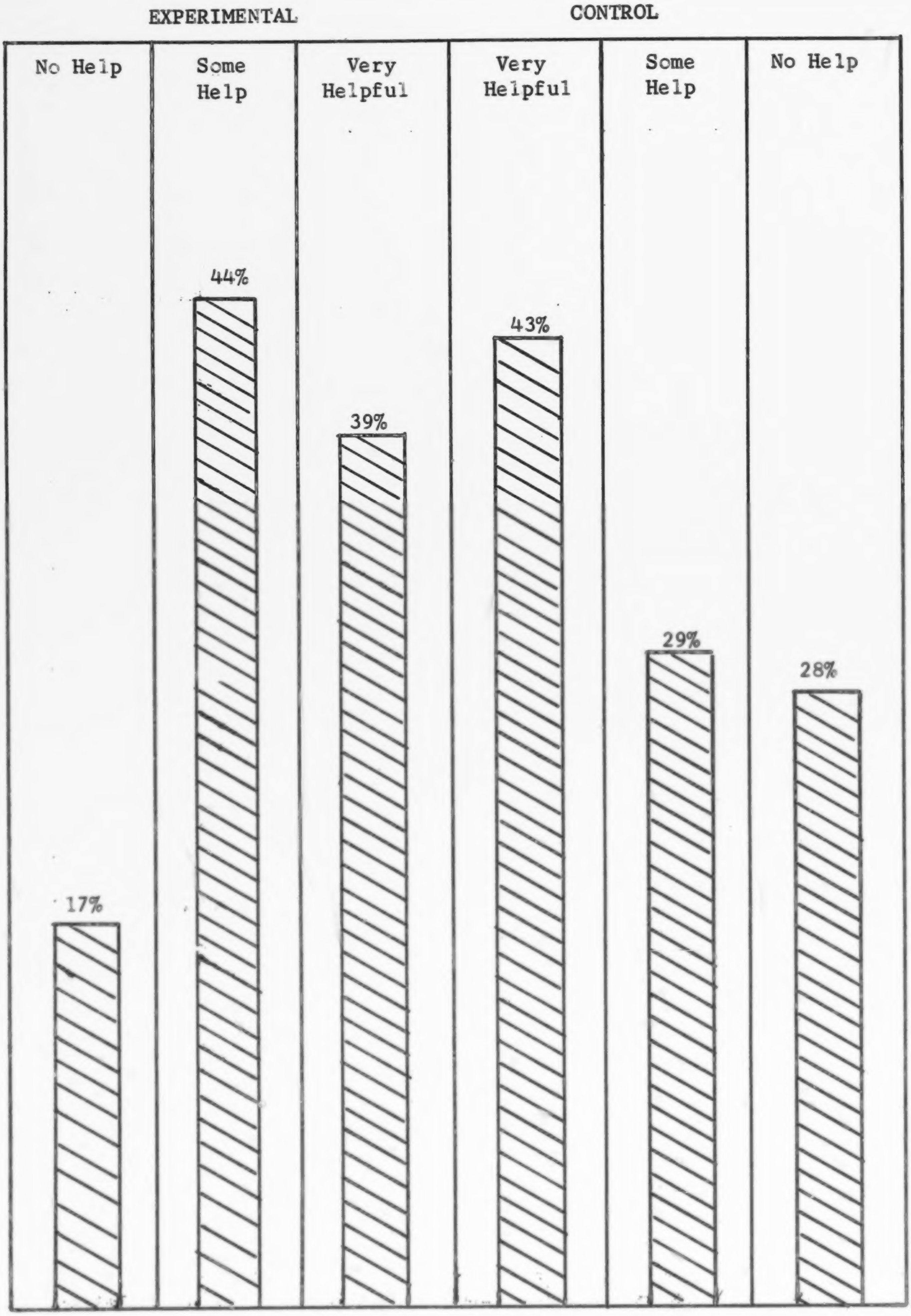


FIGURE 3 (CONT.) — COMPARISON OF EVALUATION MADE BY BOTH SAMPLES OF THE SPECIFIC ACTIVITIES IN THE COURSE



*Inquiry made of this sample only.

Figure 4. Composite Evaluation of Course by both Samples:



Indicated Current Value and Improvement in Curriculum

The composite graphs, Figure 4, indicate the over-all helpfulness of the course felt by the experimental sample and the estimated helpfulness as projected by the control sample, although they had not experienced such a course. The old adage, that anticipation is greater than possession, seemed to have been demonstrated in these comparisons. In the highest degree of evaluation, very helpful, forty-three percent of the control sample felt that such a course would have been very helpful, whereas, thirty-nine percent of the experimental sample, who were in the course, felt it had been very helpful to them. In the lower comparative degree of some help, forty-four percent of the experimental sample felt that the course had been of some help, but only twenty-nine percent of the control sample felt that it would have been some help to them. Only seventeen percent of the experimental sample felt the course had been no help and twenty-eight percent of the control sample felt that it would have been of no help to them. Positive far outweighed the negative evaluations.

The combined positive evaluations of each sample indicated an overall benefit of eighty-three percent for the experimental and seventy-two percent for the control sample. It was found when activities were listed in order of their positive composite percentage, for the two classification of "Very Helpful" and "Some Help," a ranking could be seen which would serve as an index for creating or revising a curriculum for a training course. Table 36 lists the activities in the order of choice.

Table 36 Ranking of Activities in Order of Degree of Benefit as Stated by Both Samples

EXPERIMENTAL			CONTROL		
VERY HELPFUL					
Base Percent- 39 and above			Base Percent - 43 and above		
Rank		% Rated	Rank		% Rated
1.	Theme Writing	75%	1.	Writing term and research papers	60%
2.	Practice in Note-taking	69%	2.	Theme writing	57%
3.	Instruction in travel	67%	3.	Practice in Note-taking	50%
4.	Writing term and research papers	60%			
5.	Practice in taking different kinds of examinations	56%			
6.	Discussion of Methods of handling reading problems	55%			
7.	Information about special resources for blind people	40%			

Table 36 Ranking of Activities in Order of Degree of Benefit as Stated by Both Samples (Continued)

SOME HELP					
Experimental-Base % 44 & Above			Control-Base % 29 & Above		
Rank		% Rated	Rank		% Rated
1.	Help in course planning	64%	1.	Personal counseling	74%
2.	Crafts and/or shop	63%	2.	Instruction in dancing, bowling, other sports and games	52%
3.	Small group discussion	60%	*3.	Theme writing	46%
4.	Discussion with other blind students about problems	58%	4.	Help in course planning	44%
5.	Guest lecturers	54%	5.	Instruction in Library procedure	43%
6.	Instruction in Library procedure	52%	6.	Information about special resources for blind people	40%
"	Instruction in clothing care and meeting personal needs independently	52%	*7.	Practice in taking different types of examinations	39%
"	Instruction in dancing, bowling, other sports and games	52%	8.	Instruction in typing	38%
*7.	Information about special resources for blind people	47%	9.	Discussion with other blind students about problems	37%
			*10.	Writing term and research papers	36%
			*11.	Practice in note-taking	35%
			12.	Instruction in clothing care and meeting personal needs independently	33%
			13.	Instruction in travel	32%
			*14.	Discussion of methods of handling reading problems	30%
*Ranked by same sample as Very Helpful			*Ranked by same sample as Very Helpful		

As indicated in Figure 3 the control sample evaluated fifteen instructional activities that they might have had in a preparation course, fourteen of which were evaluated by both samples. The control sample evaluated one preparation activity that was not evaluated by the experimental sample, that of "Personal Counseling." The composite index rating placed it at the head of the classification, "Some Help," in Table 36 and confirmed the value of a service that was an intergral part of the course experienced by the experimental sample.

Of the fourteen training functions evaluated by the two samples and ranked according to the composite base percent index, seven were rated as "Very Helpful" by the experimental sample and three were rated "Very Helpful" by the control sample. These training activities are shown in Table 36. The composite index of the control sample excluded two other training activities from the "Very Helpful" classification of Table 36, although they were so rated in Figure 3. These two activities were: "Discussion of Methods of Handling Reading Problems" and "Taking Different Types of Examinations." Both were listed in the "Some Help" classification in Table 36 but had been evaluated "No Help" in Figure 3. The activity was: "Instruction in Clothing Care and Meeting Personal Needs Independently."

Consequently, the control sample felt that fourteen of the fifteen activities had positive value in additional preparation of a blind student for college. The only activity excluded by the control sample was Braille. Both samples concurred in the rating given Braille.

While at no time were members of either sample asked to give reasons for their ratings, it is a conjecture that the concurrence of both samples on the lack of need for Braille instruction was based on different reasons. It is felt that the experimental sample felt they had sufficient competency in this skill, but the control sample felt that it was not a necessary skill for them. The need for competency in this skill is evidenced in the program of every rehabilitation facility and specialized school for the blind. Such competency, if not developed before graduation from the secondary level, should be acquired before college admissions, according to the reports of both students and college personnel in this study.

The substantial agreement of both samples about the value of training activities should afford a sound basis for creating a college preparation course by agencies desiring to do so. A study of the evaluations and the exact meaning of the ratings and rankings given should enable agencies already conducting such a course of preparation for college to either continue their present offering or revise it with confidence.

CHAPTER X

IMPLICATIONS

Some surface impressions in this study create implications that should be observed and probably given further study.

Implications Regarding Communication Skills:

From the evaluations given by both samples there is an implication that Braille is an unnecessary skill for the blind student. This implication must be studied in the light of other aspects of the findings.

1. It was the predominant method used by the experimental sample, which had the largest percent of totally blind students.
2. While the largest single scale rating of the two samples indicated that instruction in Braille was of no help, the experimental sample's composite rating indicated positive value by a very substantial margin. Of the control sample more than one in three felt it would have had some value for them and approximately one in seven felt it would have been very helpful to them.
3. The question itself was so worded that the reply of a person who used Braille proficiently would likely have been given in a negative tally and consequently would create an erroneous meaning as to the value of Braille for that person.
4. The replies of both college personnel and of students gave the impression that Braille, if one were competent in its use, afforded the most dependable, most available, most adaptable, and most economical method of note-taking and notebook use.

The findings regarding note-taking imply a need for intensifying the communicative skills preparation of prospective college students. Preparation courses need to provide the occasion for demonstrating this needed proficiency by:

1. creating exercises more closely resembling the demands of college theme writing
2. short but technical research reports
3. the use of a cumulative reference file
4. taking examination questions in a form that provides independent reading and answering

Proficiency in the method used is more important than the diversity of methods and low proficiency in each.

Since Braille or other adaptations in the communicative skill area are bound to emphasize to a blind person the severity of his condition and activate the unhealthy response of denial, evaluations of skill in this area should be tactfully but thoroughly carried out. Token or strong resistance to training in this area by high school graduates is a critical sign for a thorough evaluation, especially for prospective college students.

The opinions of college personnel strongly hint the vast number of devices for the assistance of the blind that are on the market today are not being used as widely as it seems they could. Lack of proficiency in the use of these devices was felt to be the cause.

If it is a lack of proficiency, it strongly suggests to schools and facilities the need to stress standards of performance, such as typewriting speed, skillful and deft use of tape recorders and braillewriters. The possibility of skillful use of dictating equipment in taking notes and transcribing such notes at a maximum rate, as indicated by some standard of performance, is a strong implication for more intensive, if not more extensive, training.

Implications for Counseling:

The table of above-average achievement of the three levels of sight gives an implication of the severe handicap under which the low-vision person may be working. Table 32, page 69 presents a consistent pattern of poorer performance in the two levels of better vision. This implies that the legally blind person with a residual low level of sight may be facing a greater handicap in doing college work than the totally blind. If this implication is true, on the average, it may become increasingly important as the definitions of blindness or definitions of eligibility change to include more persons of low vision.

To the rehabilitation counselor and guidance persons, it may present a problem of more exact evaluation of performance in order to define the specific services needed to overcome the handicap. An encouraging aspect of the implication lies in the possibilities that the handicap may be modified, possibly removed, by one or more of the services within the broad field of rehabilitation agencies.

An implication that may create concern for prospective blind students, their parents, rehabilitation counselors and their agencies if found in the estimated time for a blind student to complete college. The implication is based on a projection of average number of hours completed by the students involved in this study. Some additional implication was also found when certain quality of work was the criteria of projection.

There is a presumption that the four-year curriculum leading to a bachelor degree is always completed in eight semesters--no more, no less. However, the expansion of some four-year curricula to five-year curricula suggests a questioning of the four-year presumption. Unfortunately, no information is at hand to give the average time required of the college population to acquire a bachelor degree. The implication may be helpful in planning and setting realistic goals, but additional information is needed before decisions are made that would prevent the maximum development of the capable handicapped person to serve society.

Case study implies there is such a facet of personal adjustment as the slow starting academic performer. Such a person attracts no attention by anti-social behavior and his energies may be directed to this phase of college adjustment first with full intent of later concentrating on academic work--but alas, it is too late!

The symptoms of such a trait may be first seen in the student having attained a substantial high school record by the time of graduation, yet, on an early test in a post graduation situation, may make a very low score. These low scores may gradually change over a period of weeks. If the person is in a highly competitive situation, these few slow weeks may be the prelude to academic doom and the student needs an awareness of the importance of the beginning weeks. There is a very little academic warm-up time. Can counseling identify this adjustment trait and help the student understand its relevance?

CHAPTER XI

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Hopefully, a study and report of this kind will have stimulated thought and enabled those who read it to reach some conclusions besides the ones manifest in the purpose and justification of the project and its anticipated results. Fortunately those who study the report will set up their own conclusions and evaluate them, as well as the ones stated here, by whatever conviction the report creates and their own experience justifies. As an obligation of research and a sense of responsibility to the students, the college personnel, consultants, advisors, rehabilitation agency personnel, project staff, and, singularly, the sponsoring federal agency, these conclusions are drawn and stated.

In summary, this project was a three-year demonstration and research study of the performance of two groups of blind college freshmen. One group, known as the experimental group, had additional preparation of ten weeks after finishing secondary school before entering college and the other group, known as the control group, had no additional preparation before entering college.

The two groups comprised the research sample of 102 students, approximating one-half of one percent of the blind college student population. They were drawn from 13 states, ranging from Virginia in the East to Arizona and Utah in the West, and were enrolled in 70 different colleges and universities, ranging in size from less than 150 to 27,000 students, geographically distributed from the Atlantic to the Pacific coasts with all but 4 being accredited in one of the six regional college accrediting associations.

By standardized measurement the ability levels of the two groups closely approximated the normal distribution in the population. Comparisons of group performance in college were limited to those students enrolled in accredited colleges, but the results of work in unaccredited colleges are given and seen to have genuine educational value for their students.

The purpose of the project was to demonstrate the value of additional preparation of blind high school graduates before entering college. Additional preparation provided some academic work but more in the skills and competencies of personal performance necessary for a blind person to offset the handicap caused by the loss of sight. Additional preparation also provided for testing, evaluation, and counseling to enable the student to more realistically evaluate his goals with regard to his total performance. Such evaluations were reported to the students' rehabilitation counselors for use in their continued rehabilitation planning.

As a menas of obtaining information from new rehabilitation sources, as well as feed back from the experimental students, a follow-up study was made to each campus to survey the ideas of involved levels of college personnel and of the students themselves. A mass of factual information and personal opinions were obtained from which evaluations were made. Objective data has been used in all comparisons and are as nearly free from bias of interpretation as a simple statistical presentation would permit. Subjective data such as opinions and evaluations have been presented to give as nearly the meaning intended by the person giving the information as the condensing of such a volume of data would permit. It is felt that sufficient data has been given in the body of the report to both sustain the validity and indicate the bias of the conclusions and recommendations given.

Conclusions Related to the Demonstration Course of College Preparation Project:

Since the major theme of the purpose of the project was to demonstrate the effectiveness of a well designed and structured pre-college personal adjustment and orientation training courses for blind prospective college students and to measure the effectiveness of such a program, the findings justify the conclusion that the course was effective as evidenced by:

1. The survey evaluations of both samples, those who engaged in the course before entering college and those who, after experiencing college work without having the course, felt they would have been better prepared for college by having had the course as shown in Figures 1, 2, 3, and 4.
2. The construction of a course using the priority rankings of training activities given by both samples. The course so contructed essentially duplicated the one used in demonstration-Table 36.
3. The suggestions of college personnel for the additional preparation of prospective college students which would create a curriculum closely resembling the content of the college preparation course with anticipated outcomes meeting essentially the same needs of blind students.
4. The fact that the course possibly added a dimension to the evaluation of an individual's ability to participate successfully in a college program as indicated in the staff evaluations of prospective students who did not enter college, as shown in Table 20, and of those who entered colleges as reflected in Tables 21 and 22.

Conclusions Drawn From Comparisons:

Comparisons of academic performance of the two samples by quartile distribution indicated the course must have had significant value for the experimental sample (page 40).

Comparison of the rate of continuance of the two samples gave the experimental sample a small margin of advantage for continued college enrollment. Such a margin, though small, could be significant as more blind students attend college (page 59).

Comparison of the average rate of completion for the two samples as projected in this study indicates the experimental sample would save approximately 0.3 (three-tenths) of a semester's time with variation of much more to much less, depending on college affiliations (page 63).

Comparison of grades made in accredited colleges sustains the assumption of the value of the additional preparation provided by the course gave the experimental sample a margin of advantage, small but possibly significant, in a competitive situation (Table 25, page 63).

By comparison there is a presumptive conclusion that lower ability students of the experimental sample were enabled to improve their performance more than those of the control sample, as reflected in the change in ratio of distribution in comparing Tables 13 and 26.

Comparison of the ratio of quality performance of the two samples reveals a much higher ratio of the totally blind in the experimental sample achieved the quality level of "B" and above than those of the control sample; however, it must be observed that on this level of performance for both samples, the ratio of totally blind was much higher than the other levels of better sight. (Table 32)

Conclusions Related to Guidance:

1. College personnel at all levels of college organization suggest additional preparation of blind students before college attendance. Each level sees the need in a slightly different way, but all indicate the situation today is demanding and competitive.
2. College personnel are readily accepting of the blind student and hold an open mind toward his problems.
3. College personnel expect the blind student to perform acceptably and feel that modifications must not impair teaching and learning opportunities.
4. College personnel expect the blind students to know how to provide adaptations for overcoming the handicap imposed by loss of sight and assume the responsibility of making these known immediately to expedite student-teacher cooperation.
5. College professors expect blind students to use acceptable sighted means of written communications without excuse of substandard techniques.
6. College professors expect punctuality and regular attendance of the blind as they do of other students.
7. College counsel regarding curriculum and time for scheduling difficult courses has much to commend it to students.
8. Fellow sighted students are ready to assist but not to pamper the blind student.
9. The basic problems of academic performance such as note-taking, adequate reading, alert and appropriate classroom participation, using and maintaining prepared course notebooks, and proficiency in taking tests and examinations are

common to all students but present additional concern to instructors and demand initiative on the part of the blind student.

10. Note-taking efficiency and adequate use of readers appear to be the two most difficult problems of blind students in college.
11. The choice of major areas of study should be deliberately made with as much objective support of the choice as possible.
12. The choice of schools should be carefully weighed by comparing the schools' specific standardized norms of performance with that of the student's performance on similar standardized examinations.
13. Major areas of study chosen by blind students are in the liberal arts.
14. Selection of a college should be specific for the student (his background--academic and cultural) and his objective, whether the college be accredited or unaccredite, small or large, private or public.
15. Size of the college had no general significance by comparison of performance, but case study indicates significance for specific individuals.
16. Advantages of public or private or differences of performance may be more individual than institutional--the quality of performance was slightly higher in public, but rate of completion slightly higher in private schools.
17. Of three school backgrounds, residential, public-private, or other, students with residential school backgrounds excelled by a narrow margin, but possibly very significant margin, in a highly competitive situation.
18. Predominant choices of placement areas indicated the profession of teaching for the blind is chosen with almost equal frequency as it is chosen by sighted students. (Note: This predominant choice holds tremendous implications regarding equal employment opportunities and professional evaluation.)

Recommendations:

1. Further study of a longitudinal nature concerning the undergraduate to verify the implications of the rate of completion, its merits and demerits.
2. Study of a longitudinal nature to determine the accuracy of the extraordinarily high rate of continuance of the blind as compared with the sighted data now existing.
3. Immediate study of the placement prospects, specifically the field of teaching, as indicated by the choice of employment, the demand-supply, after attrition, present use of blind teachers and the obstacles of placement.
4. A refining follow-up of, or re-study, of school backgrounds for the determination of the critical catalyst of performance by students with a mixed school background which could not be overlooked but was not analyzed in this study.
5. A study of counseling or other influence provided blind students by which a higher ratio of blind than sighted females enter

college and by which less blind students become college dropouts, if true.

A final word, the creeping pace with which this study has come to this point has often hinted that the need for it might pass away before it could make its contribution. However, the basic philosophy of education yet remains to be the development of the abilities of the human being. The fundamentals of rehabilitation rest on the firm conviction that, as the iceberg, "more is there than meets the eye." With these two basic philosophies as fixed stars, this study is sent forth, and if for no other reason than in for swatting a gnat or climbing Mt. Everest--it is there, have it!